

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Sunday, June 19, 2011 4:58 PM
To: Farhat, Jody S NWD02; McMahon, John R BG NWD; Tipton, Robert A Col NWD; Anderson, G Witt NWD; Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK; Blechinger, Erik T NWO; [REDACTED] K NWD; [REDACTED] NWK; Blair, Amy E NWK; Williamson, Eileen L NWO; Farmer, Monique L NWO; Johnston, Paul T HQ@ NWO; [REDACTED] NWD; [REDACTED] NWD; B [REDACTED] NWD; [REDACTED] M NWD02; Love, Raymond E MAJ NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] M SAW
Cc: [REDACTED] NWD02; S [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] D NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02
Subject: RE: WM Talking Points for 19 June stakeholder call (UNCLASSIFIED)
Attachments: 2011 Missouri River Flood Talking Points 19 Jun 2011.docx

Classification: UNCLASSIFIED
Caveats: NONE

fyi

Classification: UNCLASSIFIED
Caveats: NONE

2011 Missouri River Flood Talking Points
Missouri River Water Management
19 June 2011

We posted the updated reservoir forecast on the web this afternoon. There were no changes to the release schedule. We continue to watch the looming storm forecast over the Dakotas but for now the schedule stands.

Releases for the 6 dams are as follows:

- Fort Peck –Releases remain at 65,000 cfs today and will be reduced to 60,000 cfs on Monday as inflows continue to decline.
- Garrison – releases remain at 150,000 cfs
- Oahe and Big Bend –Releases from both projects were increased to 160,000 cfs today, and will be held at that level.
- Fort Randall – releases will remain at 143,000 cfs today and tomorrow, gradually stepping up to the peak release of approximately 148,000 cfs with the schedule dependent on the Gavins Point pool level.
- Gavins Point – releases remain at 150,000 cfs.

The forecast is based on best available information at this time; actual releases are based on conditions on the ground. We'll know more in a couple days when we see where the forecasted rains actually fall and how much runoff comes into each reservoir as a result. Peak releases are expected to continue well into August.

The mountain snowpack continues to decline.

Above Fort Peck: peaked at 141 percent of the normal peak accumulation, currently at 64%, down 55% from this year's peak

Fort Peck to Garrison: peaked at 136 percent of the normal peak accumulation, currently at 62%, down 54% from this year's peak

As of June 17

North Platte: peaked at 156 percent of the normal peak accumulation, currently at 54% (-65%)

South Platte: peaked at 150 percent of the normal peak accumulation, currently at 42% (-72%)

[REDACTED] NWO

From: Reed & Staci Martin [REDACTED]
Sent: Sunday, June 19, 2011 11:53 PM
To: Farhat, Jody S NWD02
Subject: thanks NOT!!!

thanks jody we've lost our crops next our home, hope you and the corp are happy !!!!!!!!!!!

NWO

From: CENWD-EOC NWD
Sent: Sunday, June 19, 2011 10:41 PM
To: CE-UOC HQ02
Cc: [REDACTED] W HQ02; [REDACTED] HQ02; [REDACTED] LTC NWS; Anderson, G Witt NWD; [REDACTED] HQ@NWD; [REDACTED] ULA; [REDACTED] NWD; [REDACTED] NWD; Blechinger, Erik T NWO; [REDACTED] LTC NWW; [REDACTED] LTC NWP; CENWD-EOC NWD; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] MAJ NWK; Farhat, Jody S NWD02; [REDACTED] HQ; [REDACTED] HQ02; [REDACTED] LTC NWW; [REDACTED] NWD; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Jordano, James J LTC NWO; [REDACTED] A@SAD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWS; [REDACTED] t NWD; [REDACTED] SAW; [REDACTED] @NWD; McMahon, John R BG NWD; [REDACTED] R COL NWP; [REDACTED] R NWD; [REDACTED] s NWD; [REDACTED] CELA@NWS; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] ; Ruch, Robert J COL NWO; [REDACTED] NWD; Rychlik, Dean L; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] SWD@SWG; [REDACTED] NWD; [REDACTED] Col NWD; [REDACTED] NWD; [REDACTED] ULA@NWW; [REDACTED] HQ02; [REDACTED] M NWD; [REDACTED] ; [REDACTED] COL NWS
Subject: NWD Operation Mighty Mo SITREP- as of 2100 19 June 2011 (UNCLASSIFIED)
Attachments: NWK_NonFederal_Levees_damage_HoltCty_10_2.pdf; 550overtop.pdf; Flood_Fight_Storyboard_19JUN.pdf; New Image.JPG

HQ UOC-

Missouri River Basin Flood Update as of 2100 Sunday, 19 June 2011 Pacific Time:

This report covers the operational period from 2130 Saturday, 18 June to 2100 Sunday, 19 June 2011 Pacific Time.

A. Update from NWD Missouri River Basin Water Management Office:

1. There were no changes to the release schedule. We continue to watch the looming storm forecast over the Dakotas but for now the schedule stands. Releases for the 6 dams are as follows:
2. Fort Peck -Releases remain at 65,000 cfs today and will be reduced to 60,000 cfs on Monday as inflows continue to decline.
3. Garrison - releases remain at 150,000 cfs
4. Oahe and Big Bend -Releases from both projects were increased to 160,000 cfs today, and will be held at that level.
5. Fort Randall - releases will remain at 143,000 cfs today and tomorrow, gradually stepping up to the peak release of approximately 148,000 cfs with the schedule dependent on the Gavins Point pool level.
6. Gavins Point - releases remain at 150,000 cfs.
7. The forecast is based on best available information at this time; actual releases are based on conditions on the ground. We will know more in a couple days, when we see where the

forecasted rains actually fall, and how much runoff comes into each reservoir as a result. Peak releases are expected to continue well into August.

B. Omaha District Update:

1. Editorial Board Meeting with Omaha World Herald went well. Attended by BG McMahon, COL Ruch and staff. Information presented was well received and the board left with a better understanding of the 2011 Flood events.

2. Nebraska: Missouri River PL 84-99 Federal Levee, R-548, located south of Brownville, NE, Operated and Maintained by a local levee sponsor, built by USACE Overtopped today (19 June 2011) Water levels at the Brownville gage increased approximately 2 feet in a 24 hour period from 0530 18 June to 0530 19 June. Water is currently going over approximately 30 foot stretch on southern portion of levee system. USACE reports that the sponsor has placed sandbags to cut off flow along an approximate 400' reach 2 sandbags high and is currently raising several other low spots in a similar manner where water was on the crest of the levee. Potential impacts include the Cooper Nuclear Plant. Grade at Cooper Nuclear Plant levee is approximately at an elevation of 903 and the facility has sandbagged to an elevation of 907. Water is approximately at an elevation of 900.5 feet.

3. Surveillance team has deployed to Cooper Nuclear facility at R-548 Missouri River & Little Nemaha Levee to examine the freeboard and surface water elevation.

4. L601-Watkins Ditch RB: Boils are becoming a problem in this section. Sponsor is ringing boils with sandbags and barrels. The barrels are causing boils to move to other locations. The sponsor has been advised to cut holes in barrels to allow boils to flow. Seepage is increasing and the landside berm is becoming saturated. The sponsor is monitoring.

5. Nebraska: North Platte, NE - No additional advance measures planned for the North Platte City, Gothenburg, and Brady. The Central Nebraska Public Power and Irrigation District confirmed the maximum sustained flows of approximately 5,250 cfs. Based on surveys completed and hydraulic information, and the design flow of 9,000 cfs for the temporary measures, the team has returned to Omaha today, Sunday, June 19, 2011.

6. L550/561-Missouri River LB: Sponsor notified USACE that L550 overtopped. Field teams reported overtopping across approximately 1500' section in multiple places. Field observation suggests that the crest is wearing down. At 1045, there were many overtopping areas with material moving and it was determined to be unfeasible to bag the extensive lengths of these areas. The levee sponsor along with the local, county, and State officials have determined that the amount of overtopping and severe erosion is too extensive to floodfight. Failure appears to be imminent as the erosion is occurring rapidly. The local, county and state officials are now concentrating their efforts on evacuation and road closures.

7. Montana: Ft. Peck Dam, MT - Continuing to monitor scour along the length of the wing wall. No other significant dam safety issues.

8. North Dakota: Williston, ND - The toe road rehab project is substantially complete (18 June 2011).

Fort Yates, ND - Standing Rock Sioux Tribe (SRST): South side work is 15% complete. They did not work today.

9. South Dakota: Pierre/Ft. Pierre, SD - Increase in water surface elevation due to increase discharge (150K to 160K cfs). No significant issues to report.

10. Dakota Dunes, SD - Continuing to monitor erosion along South levee, the sponsor has armored the levee slope with rip-rap to mitigate erosion damage.

11. Fort Randall Dam, SD - The repair of concrete slab spalling should be complete on Tuesday (21 June 2011), the work is being completed by project personnel. Project personnel also plugged the drain holes in the sidewalls of the spillway to reduce backflow of water surcharging the groundwater and water spouting out the piezometer holes and slab joints adjacent to the spillway. No additional significant dam safety issues to report.

12. Iowa/Missouri: Mills County - Direct Assistance L611 - Haul road improvement project is complete. Sand/gravel suppliers trucks are not operating today, will resume placing layer on tomorrow morning.

13. Atchison County, MO - Expect an official request from the State of Missouri for Atchison County, MO for 20,000 sand bags and a sand bag filling machine to be delivered to Rockport, MO on 21-Jun-2011.

14. Omaha-Missouri River RB: Placement of an inverted filter near I-80 should be complete by the end of the day today. The Omaha system is in good shape. Repairs to a sinkhole at the pump station near Syngenta include injection grout and gravel/stone to prevent further erosion of slab and storm-water drainage structure. Hills Bros. pointed out at least 6 pin boils are developing in their drainage pond.

15. L624-627/614/611-Mosquito Creek and Upper Pony Creek: A leaking flap gate at Mosquito Creek's right bank was investigated. Sponsor had unsuccessfully attempted to plug the landside with sandbags. Corps advised to attempt to close the creek side with sandbags. The National Guard and the sponsor are both performing 24-hour monitoring.

16. L594/575-BW,PV,Waubonsie: The sandbag closure on Waubonsie Creek is complete. A few boils at the confluence of Waubonsie Creek and MR need to be ringed however the majority of boils only require monitoring. Sponsor is ringing boils and has been notified that new boils need to be ringed. There are a large number of animal burrows >12" in diameter and tall vegetation makes surveillance difficult. There is approximately 3.5' of freeboard as measured by eye.

17. L575-BW,McKissock, Buchanan, Atchison, Hamburg: Construction of Ditch 6 levee continues. Plastic covering was not finished by the contractor and sections placed by the Contractor were not placed far enough below the waterline, leading to erosion under the plastic sheet protection. City is pumping interior drainage at several locations. The pumps have not yet arrived. Sponsor began 24-hour levee surveillance. The city was notified that it needs to request National Guard assistance through the State Emergency Office. Further detail on progress of L575 is provided in the NWO SITREP in ENLink.

C. Kansas City District:

1. Overtop breach at Holt County No. 10. Overtop breach occurred at some point between 2000 and 2200 on 18June2011. Overtop breach occurred vicinity of river mile 500 on the left descending bank. The Village of Big Lake has been evacuated. Missouri Highway Patrol had reported that the levee was overtopping at multiple locations vicinity of the overtop breach last night. Attached map shows approximate location of breach. Pertinent information on the levee system and potential impacts are as listed below:

ITEM NO: 114A, Section 2

LEVEE NAME: Holt County Levee District Number 10 RIVER BASIN: Missouri River

RIVER LOCATION: Left Descending Bank Missouri River, River Miles 502.7 to 492.0 and the Right Descending Bank of Little Tarkio Creek

SPONSOR: A Levee District organized by the Holt County Missouri Circuit Court

2. Levee Sponsor will create a deliberate levee cut in the levee system at or near the downstream end. NWK concurred with the Levee District's decision regarding deliberate levee cut. Deliberate levee cut will allow water to flow through bottom (upstream to downstream) once water levels have equalized. Intent is to lessen inundation depths to reduce damages.

D. Northwestern Division Update:

NWD is not tracking any RFI due to HQUSACE at this time. If there are any outstanding RFI from HQ from NWD, please contact CENWD-EOC@usace.army.mil or ~~WAS Raymond~~ at ~~WAS Raymond~~@usace.army.mil. Please do not contact NWD or NWK directly, as they are already heavily engaged with state and local stakeholders, and information flows best when using the chain of command.

E. The links below will help "paint the picture" of the region, and also pre-empt questions and RFI's by providing access to the same real-time data that NWD and its Districts use.

Useful Links:

For current reservoir levels, inflows and releases, visit the Missouri River Basin Water Management website at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

Updated Daily: Details on the reservoirs in the daily bulletin at <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>

Release data for all six reservoirs through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

This ftp site contains an excellent pictorial presentation of the Missouri River Basin system. Please take time to review, as it will help you to better understand the situation and the system we manage.

<ftp://ftp.usace.army.mil/pub/nwd/Mo%20River%20Flooding%206%20June%20update/>

[FOUO] The NWD Common Operating Picture. (Contains National Levy Data base, 1-5 day QPF, Dams, Emergency Management layers, latest critical infrastructure data, etc.)
<https://egis.nwd.usace.army.mil/pls/apex/f?p=200:1:1908605002954834>

[FOUO] For great "pictures from the field" of the flood fight, projects, etc visit the MICA (Mobile Information Collectors Application) website:
<https://gearportal.usace.army.mil/sandboils/listing.html>

Select Omaha Flood Fight - "Show Map in Portal" Button.

To use Google Earth - on the MICA Dashboard hit the button "right click to copy to Network link" with a right click. Select Copy Shortcut option.

Open Google Earth and Right click under my places and select Add - scroll down to add a Network link.

Give it a name and paste the short cut you copied from the MICA dashboard. Google should auto refresh the data on a 5 min interval.

For the most accurate and efficient flow of information, please direct and questions, concerns, or comments to the NWD EOC, or to the undersigned. The NWD RCO Battle rhythm is also attached, and it is the most current as of 19 June 2011.

UOC: please acknowledge Receipt.

V/R

[REDACTED]
Contingency Operations Officer
Readiness and Contingency Operations
Northwestern Division
US Army Corps of Engineers

Desk: [REDACTED]

Cell: [REDACTED]

[REDACTED]@usace.army.mil

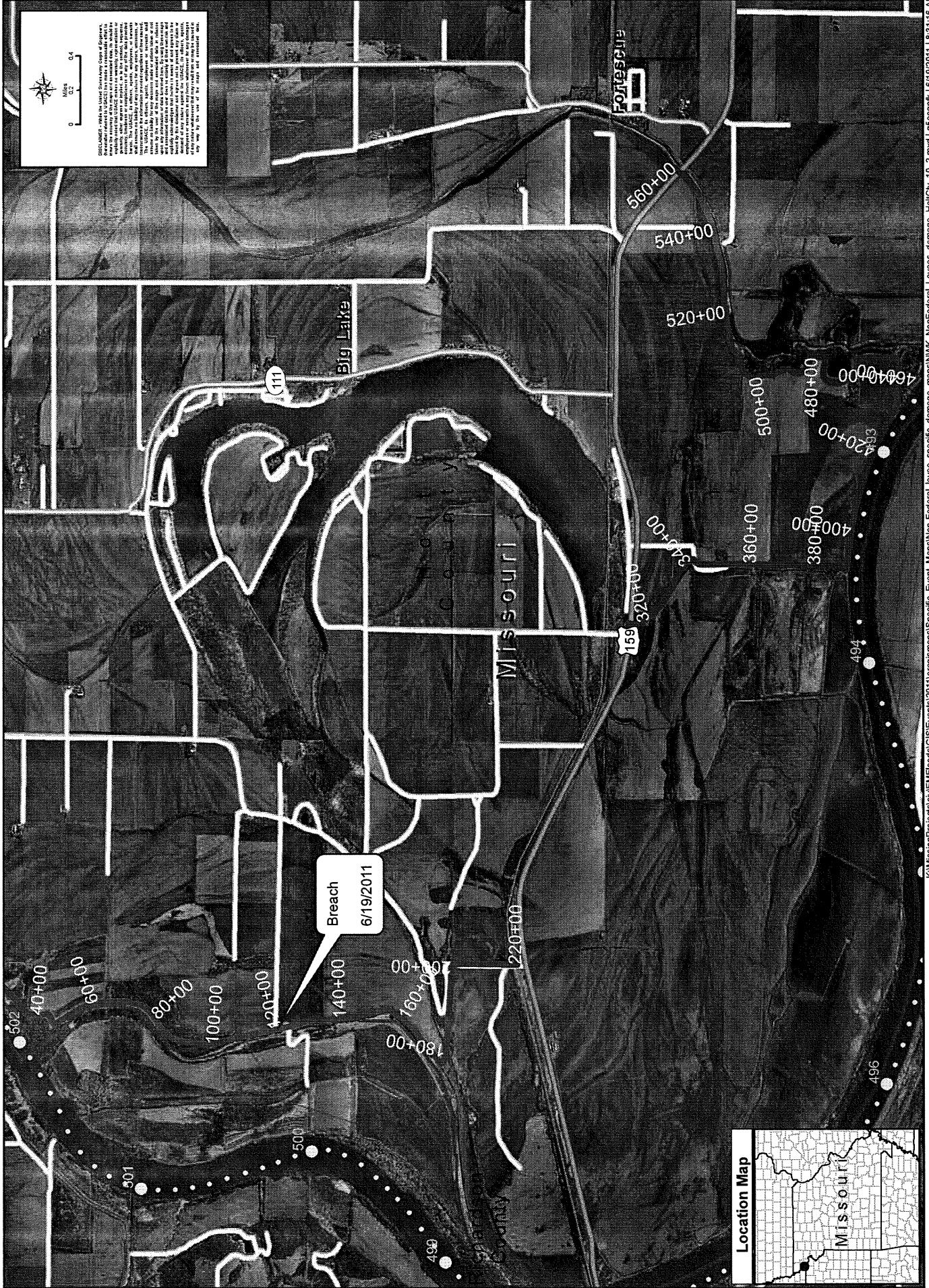
[REDACTED]@usace.army.smil.mil

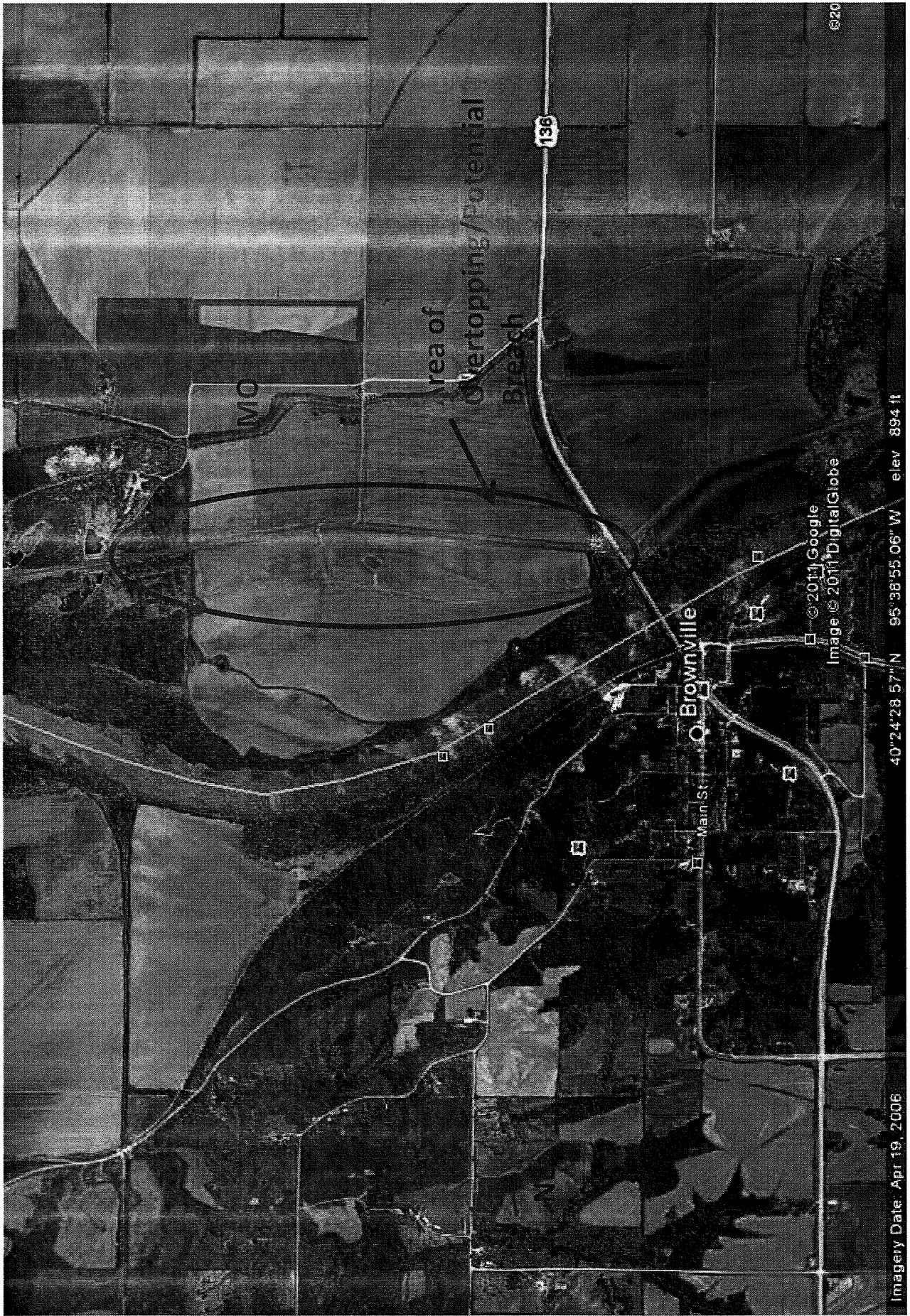
Emergency Satellite Phone: [REDACTED] Emergency Cell: [REDACTED]

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CENWK Holt Cty 10 Section 2 Breach 19 JUNE 2011





Imagery Date: Apr 19, 2006

40°24'28.57" N 95°38'55.06" W elev 894 ft

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Image © 2011 DigitalGlobe



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem Reservoir Bulletin (Updated 19 Jun; 0900 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation <ul style="list-style-type: none"> 2252.1 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 50,000 cfs (18 Jun) 67,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 65,500 cfs (18 Jun) 65,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 2246 ft msl – 2250 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 2250 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 65,000 cfs. Reservoir will use several feet of surcharge storage above the exclusive flood control pool as spillway gates are raised. Record Pool Elevation (Year) <ul style="list-style-type: none"> 2251.6 msl (1975) Record Flow (Year) <ul style="list-style-type: none"> 35,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none"> 65,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1853.9 ft msl 24-hr Change (+0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 169,000 cfs (18 Jun) 148,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 150,000 cfs (18 Jun) 148,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1850 ft msl – 1854 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1854 ft msl River Stage (Bismarck) <ul style="list-style-type: none"> 18.82 (0815 CDT 19 Jun) Flood stage – 16 ft 18.71 (0715 CDT 18 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 150,000 cfs. Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1854.8 msl (1975) Record Flow (Year) <ul style="list-style-type: none"> 65,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none"> 150,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1618.5 ft msl 24-hr Change (-0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 156,000 cfs (18 Jun) 156,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 153,600 cfs (18 Jun) 150,500 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1617 ft msl – 1620 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1620 ft msl River Stage (Pierre) <ul style="list-style-type: none"> 19.11 (0830 CDT 19 Jun) Flood stage – 15 ft 18.9 (0715 CDT 18 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 160,000 cfs by mid June. Reservoir will peak within a foot of the top of the spillway gates at 1619 feet. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1618.7 msl (1995) Record Flow (Year) <ul style="list-style-type: none"> 59,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 160,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1419.5 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 150,000 cfs (18 Jun) 150,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 153,000 cfs (18 Jun) 148,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1422 ft msl – 1423 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1423 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 160,000 cfs by mid June. Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1422.1 msl (1991) Record Flow (Date) <ul style="list-style-type: none"> 74,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 160,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1364.5 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 158,000 cfs (18 Jun) 163,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 143,600 cfs (18 Jun) 143,200 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1365 ft msl – 1375 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1375 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 148,000 cfs by mid to late June. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1372.2 msl (1997) Record Flow (Date) <ul style="list-style-type: none"> 67,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 148,000 cfs (Mid to late June) 	Midnight Elevation <ul style="list-style-type: none"> 1207.7 ft msl 24-hr Change (10.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 149,000 cfs (18 Jun) 152,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 150,100 cfs (18 Jun) 150,300 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1208 ft msl – 1210 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1210 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 150,000 cfs. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1209.7 msl (2010) Record Flow (Date) <ul style="list-style-type: none"> 70,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 150,000 cfs (Mid June)

Release and inflow figures include a + or - 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun; 0900 CDT)

Fort Peck	Garrison	Osage	Big Bend	Fort Randall	Gavins Point
<p>24-hr forecast (Glasgow, MT) Today: Scattered showers and t-storms, showers likely w/ possible t-storms after 3pm. Mostly cloudy, w/ a high near 72. East NE wind around 9 mph. Chance of precip. 70%.</p> <p>Tonight: Showers likely w/ possible t-storms before midnight, scattered showers and t-storms after midnight. Mostly cloudy, w/ a low near 57. North NW wind from 6 to 13 mph. Chance of precip. 70%.</p> <p>Monday: Scattered showers, t-storms also possible after noon. Mostly cloudy, w/ a high near 68. North NW wind from 10 to 15 mph, gusts up to 21 mph. Chance of precip. 50%.</p>	<p>24-hr forecast (Riverdale, ND) Today: A 50% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 76. SE wind from 14 to 18 mph, gusts up to 25 mph.</p> <p>Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind 14 - 17 mph decreasing to from 6 - 9 mph. Winds could gust as high as 24 mph. Chance of precip. 70%. New rainfall amounts from .75 - 1 inch possible.</p> <p>Monday: A 50% chance of showers and t-storms. Some storms may produce heavy rains. Cloudy, w/ a high near 63. East wind from 14 - 16 mph, gusts up to 23 mph. New rainfall amounts from .5 - .75 inch possible.</p>	<p>24-hr forecast (Pierre, SD) Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 77. SE wind from 13 - 17 mph. Chance of precip. 60%.</p> <p>Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 11 mph. Chance of precip. 80%.</p> <p>Monday: Showers and t-storms. High near 69. North NE wind from 10 - 17 mph. Chance of precip. 80%.</p>	<p>24-hr forecast (Lower Brule, SD) Today: A 40% chance of showers and t-storms after 1pm. Some storms could be severe. Partly sunny, w/ a high near 81. SE wind from 14 - 17 mph.</p> <p>Tonight: Showers likely and possibly a t-storm, then showers and t-storms after 7pm. Some storms could be severe and produce heavy rainfall. Low near 62. East wind from 9 - 11 mph. Chance of precip. 80%.</p> <p>Monday: Showers and t-storms. High near 72. NE wind from 9 - 15 mph. Chance of precip. 80%.</p>	<p>24-hr forecast (Chamberlain, SD) Today: A chance of showers and t-storms after 1pm. Partly sunny, w/ a high near 82. SE wind from 11 - 14 mph. Chance of precip. 40%.</p> <p>Tonight: Showers and t-storms. Low near 63. East wind from 6 - 9 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.</p> <p>Monday: Showers and t-storms. High near 73. NE wind from 7 - 16 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.</p>	<p>24-hr forecast (Yankton, SD) Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 83. SE wind from 10 - 13 mph. Chance of precip. 20%.</p> <p>Tonight: Showers and t-storms likely, mainly from 1am - 4am. Mostly cloudy, w/ a low near 67. East wind from 9 - 13 mph. Chance of precip. 60%. New rainfall amounts from .25 - .5 inch possible.</p> <p>Monday: A chance of showers and t-storms. Partly sunny, w/ a high near 82. East NE wind from 8 - 11 mph. Chance of precip. 50%.</p>
<p>24-hr forecast (Williston, ND) Today: Showers and t-storms likely, mainly after 1pm. Some storms may produce heavy rains. Mostly cloudy, w/ a high near 72. East wind from 10 to 14 mph, gusts up to 20 mph. Chance of precip. 60%. New rainfall amounts from .10 to .25 of an inch, higher amounts possible in t-storms.</p> <p>Tonight: Showers and t-storms. Some storms may produce heavy rains. Low near 59. East wind from 6 to 13 mph. Chance of precip. 90%. New rainfall amounts from .5 to .75 inch possible.</p> <p>Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 8 to 14 mph, gusts up to 18 mph. Chance of precip. 60%. New rainfall amounts from .5 to .75 inch possible.</p>	<p>24-hr forecast (Washburn, ND) Today: A 40% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 16 - 20 mph, gusts up to 28 mph.</p> <p>Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 7 - 17 mph, gusts up to 24 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible.</p> <p>Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 63. NE wind from 14 - 17 mph, gusts up to 24 mph. Chance of precip. 60%. New rainfall amounts from .5 - .75 inch possible.</p>	<p>24-hr forecast (Ft. Pierre, SD) Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 79. SE wind from 13 - 17 mph. Chance of precip. 60%.</p> <p>Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 10 mph. Chance of precip. 80%.</p> <p>Monday: Showers and t-storms. High near 70. North NE wind from 10 - 17 mph. Chance of precip. 80%.</p>		<p>24-hr forecast (Sioux City, IA) Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 84. East SE wind from 9 - 11 mph. Chance of precip. 20%.</p> <p>Tonight: A chance of showers and t-storms, mainly after 7pm. Mostly cloudy, w/ a low near 67. East wind from 10 - 14 mph. Chance of precip. 50%.</p> <p>Monday: A chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 86. East SE wind from 8 - 13 mph. Chance of precip. 40%.</p>	

Source of information: <http://www.weather.gov>



1st Cavalry Division
U.S. Army
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun; 0900 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
	<p>24-hr forecast (Bismarck/Mandan, ND) Today: A 40% chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 17 - 21 mph, gusts up to 29 mph.</p> <p>Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 6 - 16 mph, gusts up to 23 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible.</p> <p>Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 15 - 18 mph, gusts up to 25 mph. Chance of precip. 60%. New rainfall amounts from .75 - 1 inch possible.</p>				<p>24-hr forecast (Omaha, NE) Today: Mostly sunny, w/ a high near 86. SE wind from 8 - 14 mph.</p> <p>Tonight: A 40% chance of showers and t-storms. Some storms could be severe, with large hail and damaging winds. Mostly cloudy, w/ a low near 71. East SE wind from 13 - 16 mph, gusts up to 24 mph. New rainfall amounts from .1 - .25 of an inch, except higher amounts possible in t-storms.</p> <p>Monday: Sunny, w/ a high near 91. South SE wind from 13 - 17 mph, gusts up to 26 mph.</p>

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>



US Army Corps
of Engineers
Omaha District

Missouri River Flooding (Logistics) (Updated 19 Jun; 0900 CDT)

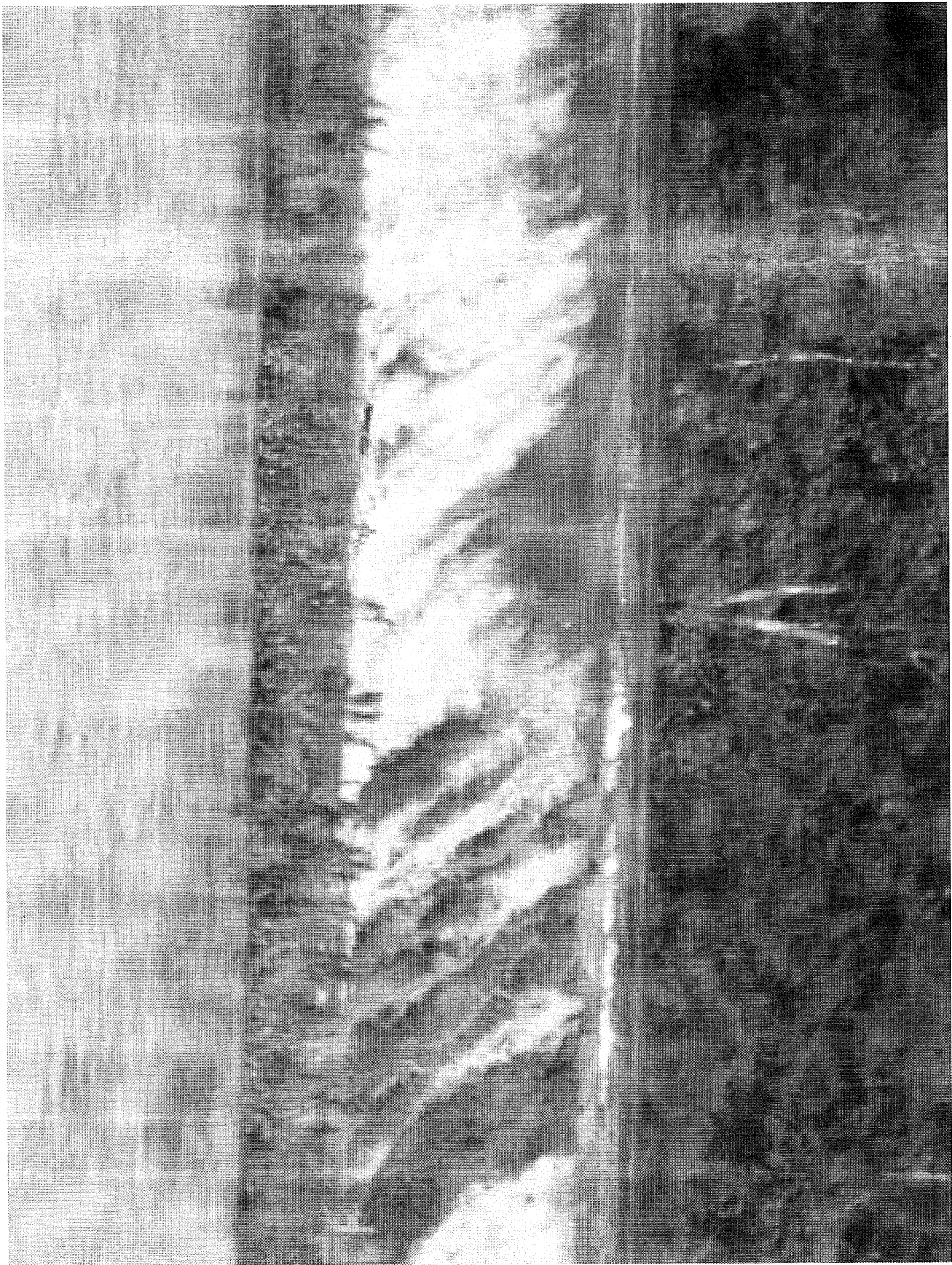
Personnel Deployed

7 (Glasgow, MT)	5 (Pierre, SD)	16 (Missouri River Survey – 7 teams)
1 (Garrison, ND)	1 (Kansas City, MO)	1 (Lincoln, NE)
4 (Bismarck, ND)	4 (Sioux City, IA)	1 (Offutt, NE)
1 (Fort Yates, ND)	1 (S. Sioux City, NE)	5 (North Platte, NE)
6 (Williston, ND)	1 (Onawa, IA)	6 (Hamburg, IA)

Equipment Deployed

HESCO (3' and 4') Issued: 74,270 LF On Hand: 30,200 LF Projected Outstanding Requirements: 35,000 LF	Slingbags On Hand: 1,350 slingbags (2K lbs each)
Sandbags Issued: 14,637,000 On Hand: 6,923,500 Projected Outstanding Requirements: 6.5 M	Heavybags On Hand: 6,420 heavybags (35x35x35 each)
Poly Rolls Issued: 2,836 rolls On Hand: 1,987 rolls Projected Outstanding Requirements: 1,500 rolls	Geotextile On Hand: 4 rolls (16' wide; 500 sq ft)
Pumps Issued: 48 pumps On Hand: 4 pumps (3 – serviceable) Projected Outstanding Requirements: 20 pumps	Additional Supplies due in: 1 pump in maintenance for parts/repair 4 USACE Pumps inbound HESCO: 5,500 LF

Source of information: CMT Brief (18 Jun 11)



From: McMahon, John R BG NWD
Sent: Sunday, June 19, 2011 6:32 PM
To: DLL-CENWD Divisionwide All Employees
Cc: McMahon, John R BG NWD
Subject: Northwestern Division Newsletter (UNCLASSIFIED)
Attachments: Flood Fight 2011 OP Mighty Mo 12 June.pdf

Classification: UNCLASSIFIED

Caveats: NONE

Northwestern Division Teammates:

I wanted to share the latest information about the continuing flood fight two of our districts are facing. The task is monumental, and our teammates in the Kansas City and Omaha Districts are proving their mettle every day, in every state from Montana to Missouri.

We are all one team in Northwestern Division and it is my expectation that you will continue to provide the excellent support to these districts that I've come to expect in my years as your division commander. Please consider volunteering to join the fight. To maintain our battle rhythm in the Missouri River basin, we need to infuse new blood and energy and allow some of our flood veterans much needed rest.

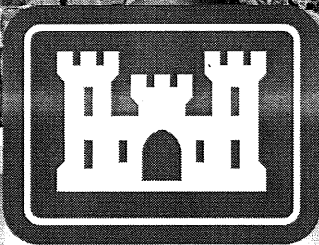
This is a historic flood fight, but it is far from finished. You can play a role on the front lines serving your fellow Americans as we work to mitigate the impacts of the floods and help communities rebuild.

Essayons!

Respectfully,
John R. McMahon
BG, USA

Classification: UNCLASSIFIED

Caveats: NONE



OPERATION MIGHTY MO 2011

Team Northwestern,

We are engaged in an epic flood fight. Our reservoirs across the Missouri River Basin are holding back record amounts of inflow. There is still more runoff from snowpack to come. We are releasing water as a system at levels we've not seen before. Both our main stem projects and our people are facing unprecedented pressures.

And you, and the dams, are performing admirably with a level of precision and care that, frankly, is awe-inspiring.

Right now, we are under an increasing level of scrutiny as the flood and its impacts play out across numerous states, stretching from Montana to Missouri. There are people critical of our actions, and I know that each of you have been on the receiving end of some of those comments. Most of those come from people whose homes or businesses are threatened by rising waters. They are frustrated, angry and looking for someone or something to blame.

Unfortunately, there is a lot of misinformation circling this act of nature and creating a distorted view of the situation. I want to take a moment to bring some clarity and facts into this ongoing dialogue.

We are not here by accident or error.

In 2010, we experienced the third highest water year on record in the Missouri River Basin. As flood events wound down at the end of the summer, we began releasing high levels of water from our six main stems throughout the winter. Those releases were slowed in January because of significant ice development and the potential of ice jam flooding. As that threat passed, we ramped up the releases once more. From December through May, releases were well above average each month.

This flood fight will continue through the summer and our hard work will continue to be scrutinized. I offer the following battle-tested advice and guidance:

Facebook and Twitter are great tools which are allowing us to communicate with the workforce and the public on our flood fighting efforts.

We certainly encourage our employees to follow our pages, but we remind you to use your best judgment when considering posting comments or replies. Being helpful is providing links to information that is already available. If you post, identify yourself as an employee. If you do not wish to be identified as an employee, don't post.

We must remember that when we speak as employees of the Corps, we speak for the Corps as a whole. Just because our name is on the page, our role as a Corps employee isn't overlooked. Additionally, if the posts are made during work hours, comments can create a liability.

The same goes for our activities outside of work. Please, do not wear your emergency management attire when you are out for an evening meal, especially if you choose to drink alcohol with your meal. Additionally, do not talk shop. People overhear our conversations and we are under tremendous scrutiny.

Use your best judgment. If you wouldn't say it or do it with a TV camera in your face, don't say it or do it online or in public.



US Army Corps of Engineers
Northwestern Division

BUILDING STRONG®

On Jan. 28, 2011, the full flood capacity of the Missouri River reservoir system was available for this year's runoff season.

On May 1, the Corps projected summer releases of 57,500 cubic feet per second from Gavins Point Dam, and we were on schedule to evacuate the runoff from the record snowpack.

But extraordinary rainfall across Montana, the Dakotas and northern Wyoming changed the situation. The May 2011 runoff into the Missouri River Basin above Sioux City was 10.5 million acre feet as opposed to our historical average of 3.3 MAF. This was the second highest single month of runoff since 1898 – the only higher being April of 1952 with 13.2 MAF.

Historically, 75 percent of annual runoff occurs between March and July. The current record inflow above Sioux City in the Missouri River basin is 40 million acre feet, which occurred in 1881. That 5-month runoff greatly exceeds the volume of runoff for any other year at this location for which records exist. It formed the basis for the design of flood control storage space behind the six main stem projects.

But this year, the current prediction for runoff from March to July is 44 million acre feet, shattering that 1881 amount. The total runoff for 2011 from January to December is forecasted to be 54.5 million acre feet, also a new record, beating the previous record of 49.0 MAF in 1997.

To respond to this record inflow, we have ramped up releases as slowly as practical to give the public and communities time to prepare. As I write this, our releases are beginning to peak at 150,000 cfs – a level they likely will remain at well into August.

In the face of these high releases, it can be difficult to understand the magnitude of the work we are doing and what impact the Corps has had on this flood event and prior flooding.

So here are a few points to consider:

Prior to the construction of the six main stem dams, the Missouri River flooded nearly every year. Those floods inhibited agriculture and navigation. Much of the economic engine that exists along the river is built squarely on the backs of the engineers who designed Fort Peck, Garrison, Oahe, Fort Randall, Big Bend and Gavins Point as well as the men and women who maintain and operate those main stem projects today.

The dams allow us to slow down and regulate the flows along the Missouri River. Without the main stem projects, preliminary analysis shows those flows would have been much higher than the 150,000 cfs we are releasing.

The main stem projects have saved more than \$44.2 billion in estimated damages (indexed to 2010 values) since they came into operation. That number doesn't include the substantial value of property protected this year. Their use, undoubtedly, has saved many lives throughout their history.

Finally, team, I want to reiterate that you are doing incredible work in a difficult environment. What you are doing matters. Communities, businesses, lives are being preserved as a direct result of what we accomplish. I am proud to serve with each and every one of you.

Essayons,



Brig. Gen. John McMahon
Commander, Northwestern Division

NWO

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 6:15 PM
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; [REDACTED] NWO; [REDACTED] HQ02; [REDACTED]
SAW
Subject: Flood Update #95 (UNCLASSIFIED)
Attachments: Hydro Summary.docx; dailybull 6_19_11.pdf; mainstembull 6_19_11.pdf;
MR_Levee_Freeboard_061911.pdf; TempOutlook_19Jun11.xls; Observed24hrPrecip.jpg;
Day1QPF.gif; Day2QPF.gif; Day3QPF.gif; Missouri River Basin Water Management Situation
Report 6-19-11.docx; 550_overtop.jpg; 550overtop.pdf

Classification: UNCLASSIFIED

Caveats: NONE

****EMERGENCY OPERATIONS****

1. Situation:

Past 24 hour precipitation with scattered 0.25 to 0.50 inch rains fell across the Missouri River Basin. Locally heavy rainfall amounts with isolated thunderstorms across parts of the Montana, the Dakotas, Nebraska, Iowa, Kansas, and Missouri. Overnight thunderstorms were more prevalent over a larger area near the Kansas City area. Some of the higher amounts across the Basin included: 2.7 inches in one hour 15 miles northeast of Hebron, South Dakota, 2.19 inches at Kansas City Downtown, 2.05 inches near Lawrence, Kansas, and 1.53 inches near Elm Creek, Nebraska. See attached.

Editorial Board Meeting with Omaha World Herald went well. Attended by BG McMahon, COL Ruch and staff. Information presented was well received and the board left with a better understand of the 2011 Flood.

Missouri River Levee Updates:

Nebraska: Missouri River PL 84-99 Federal Levee, R-548, located south of Brownville, NE, Operated and Maintained by a local levee sponsor, built by USACE Overtopped 19 June Water levels at the Brownville gage increased approximately 2 feet in a 24 hour period from 0530 18 June to 0530 19 June. Water is currently going over approximately 30 foot stretch on southern portion of levee system. USACE reports that the sponsor has placed sandbags to cut off flow along an approximate 400' reach 2 sandbags high and is currently raising several other low spots in a similar manner where water was on the crest of the levee. Potential impacts include the Cooper Nuclear Plant. Grade at Cooper Nuclear Plant levee is approximately at an elevation of 903 and the facility has sandbagged to an elevation of 907. Water is approximately at an elevation of 900.5.

L550/561-Missouri River LB: Sponsor notified USACE that L550 overtopped. Field teams reported overtopping across approximately 1500' section in multiple places. Field observation suggests that the crest is wearing down. At 1045, there were many overtopping areas with material moving and it was determined to be unfeasible to bag the extensive lengths of these areas. The levee sponsor along with the local, county, and State officials have determined that the amount of overtopping and severe erosion is too extensive to floodfight. Failure appears to be imminent as the erosion is occurring rapidly. The local, county and state officials are now concentrating their efforts on evacuation and road closures.

2. Weather:

2.a. Future Precipitation:

The Day 1 QPF (from 700 hours Sunday to 700 hours Monday): The unseasonably strong upper level storm system from Canada into the northern Rockies will swing through Utah into Colorado through 700 Monday. In response to this, surface low pressure over the Rockies will deepen and move into the western High Plains. Widespread moderate to locally heavy rain of 0.50 to 1.50 inch rains are expected from parts of Montana, Wyoming and Colorado, into the Dakotas, Nebraska, Iowa, and parts of northern Kansas and Missouri. In addition, there is a moderate risk of severe thunderstorms across parts of Nebraska, northern Kansas, northeast Colorado, northwest Missouri, and western Iowa and increasing perceptible water of 2 inches into eastern Nebraska. Severe weather is likely and should develop in the western Plains today and move east tonight. Thunderstorms that form will be capable of producing large hail, damaging winds, isolated tornadoes and locally heavy 2+ inch rains in a short amount of time. See attached.

The Day 2 QPF (from 700 hours Monday to 700 hours Tuesday): The area of surface low pressure from the Dakotas into north central Kansas should move toward northeast Nebraska/Sioux City, Iowa area by Tuesday morning. Widespread moderate to heavy rainfall is forecast from 0.75 to 2 inches in an area from the Dakotas into western Nebraska, northeast Colorado and northwest Missouri. Locally heavy 2+ inch rains can be expected. In addition to the rain, the moderate risk for severe weather shifts east and north and extends from eastern Nebraska into Iowa and far southeast South Dakota to southern Minnesota. Again, severe storms that develop will be capable of producing tornadoes, large hail, damaging winds and locally heavy rain. See attached.

The Day 3 QPF (from 700 hours Tuesday to 700 hours Wednesday): Strong surface low pressure should move toward La Crosse in west central Wisconsin by 700 Wednesday. The area of 0.5 to 2 inch rains will move with it and are expected across the eastern Dakotas into Minnesota. See attached.

2.b Temperature forecast:

Below normal temperatures (4 to 20 degrees) are expected for much of the Missouri River Basin today through Saturday, however Montana, Wyoming, and Colorado will warm to near or above normal temperatures Wednesday through Saturday. See attached.

Winds Impacting Fort Peck, Williston, Garrison, and Oahe: At Fort Peck, the winds will be from the northeast at 10 to 15 mph with stronger northwest winds at 20 to 30 mph Monday afternoon. At Riverdale, the winds will be strong at 20 to 30 mph from the southeast today and from the northeast Monday. At Williston the winds will be from the east at 15 to 25 mph and from the north northeast at 20 to 30 mph Monday. The winds at Pierre, South Dakota will be from the southeast at 15 to 25 mph today and will be increasing during the day Monday into Tuesday with 20 to 40 mph winds Monday night into Tuesday.

3. Hydro Status:

3.a. River (Flood Stage/Current Stage/Forecast/Date of Peak: Peak Stage) Montana

- * Yellowstone River at Forsyth/10.0/10.42/receding/
- * Yellowstone River at Miles City/13.0/13.3/receding/
- * Yellowstone River at Glendive/53.5/52.4/receding/
- * Yellowstone River near Sidney/19.0/17.48/rising/Jun 19: 17.7'

- * Gallatin River near Logan/8.0/7.94/rising/Jun 22: 9.3'

- * Missouri River near Toston/10.5/10.42/rising/Jun 22: 11.3'
- * Missouri River near Wolf Point/13.0/14.24/steady/Jun 20: 14.3'
- * Missouri River near Culbertson/19.0/16.86/slow rise/Jun 22: 17.3'

- * Poplar River near Poplar/15.5/11.57/rising/Jun 21: 14.5'

- * Milk River at Nashua/20.0/25.25/rising/Jun 20: 25.5'

Wyoming

- * North Platte River at Saratoga/8.5/9.91/rising/Jun 20: 10.84'
- * North Platte River nr Sinclair/9.0/10.66/rising/Jun 21: 12.27'
- * Laramie River at Laramie/5.0/5.23/rising/Jun 23: 6.29'

North Dakota

- * Missouri River at Williston/22/30.21/steady/Jun 20: 30.4'
- * Missouri River at Bismarck/16.0/18.82/steady/
- * James River at Jamestown/12.0/11.54 (1,840 cfs)/steady/

South Dakota

- * Missouri River at Pierre/13.0/19.2/steady/
- * Missouri River near Greenwood/30.0/38.03/steady/
- * Missouri River near Gayville/55.0/56.21/steady/

Nebraska

- * North Platte River near Mitchell/7.5/9.16/slight rise/June 21: 9.72'
- * North Platte River at North Platte/6.0/7.49/receding/June 20: 7.3'
- * Missouri River at Sioux City/30.0/33.5/steady/
- * Missouri River at Decatur/35.0/38.31/cresting/
- * Missouri River near Blair/26.5/31.8/slight rise/Jun 20: 31.9'
- * Missouri River at Omaha/29.0/33.39/steady/Jun 19: 33.4'
- * Missouri River at NE City/18.0/26.22/steady/
- * Missouri River at Brownville/33.0/44.51/cresting/Jun 19: 44.6'
- * Missouri River at Rulo/17.0/25.19/rising/Jun 20: 26.7'

3.b. Reservoirs:

Tributary Reservoirs:

Pipestem Reservoir, (ND) - fell 0.19' to elevation 1483.31 ft-msl. Inflows are near 170 cfs and releases are 600 cfs. 61.5% of the flood pool is occupied.

Jamestown Reservoir, (ND) - fell 0.26' yesterday to elevation 1443.79 ft-msl. Inflows are approximately 150 cfs and releases are 1,200 cfs. The combined Jamestown/Pipestem release is approximately 1,800 cfs. 38.7% of the flood pool is occupied.

Heart Butte, (ND) - Reservoir fell 0.21 ft yesterday with 4.7% of its flood control pool occupied. Pactola (SD) dropped 0.06 ft yesterday with 2.0% of the flood pool occupied. Shadehill (SD) fell 0.06 ft yesterday with 2.5% of the flood pool occupied.

Yellowtail, (MT) - rose 0.48 ft to elevation 3636.48 ft-msl with inflows of 18,200 cfs and releases of 15,400 cfs. 91.4% of its multipurpose pool is occupied.

Tiber, (MT) - rose 0.4 ft to elevation 3005.15 ft-msl. Inflows were 5,020 cfs and releases are 750 cfs as the USBR stores water to help reduce inflows to Fort Peck. 59.4% of its flood pool is occupied.

Clark Canyon, (MT) - rose 0.45 ft to elevation 5550.53 ft-msl with inflows of 1,508 cfs and releases of 288 cfs as the USBR stores water to help reduce inflows to Fort Peck. 29.4% of its flood control pool is occupied.

Canyon Ferry, (MT) - rose 0.75 ft to elevation 3794.93 ft-msl with inflows of 28,264 cfs and releases of 16,030 cfs. After Canyon Ferry inflows have peaked, 100 kaf of flood storage in Canyon Ferry will be filled. 96.3% of its multipurpose pool is occupied.

Glendo, (WY) - rose 0.07 ft to elevation 4638.77 ft-msl with inflows of 8,800 cfs and releases of 7,500 cfs. 17.6% of its flood control pool is occupied.

Missouri River Mainstem Reservoirs: (Water Management SITREP is attached) Following is a link to the Mainstem regulation forecast. Refresh to obtain the most recent copy if you keep this link open. <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>. Notes for data below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

Fort Peck Dam (MT)

6/18 Pool Elev: 2252.1 ft-msl
24-hr change: -0.1'
6/18 Ave Inflow: 50,000 cfs
6/18 Ave Release: 65,500 cfs
6/19 Scheduled Release: 65,000 cfs

Garrison Dam (ND)

6/18 Pool Elev: 1853.9 ft-msl
24-hr change: 0.1'
6/18 Ave Inflow: 169,000 cfs
6/18 Ave Release: 150,000 cfs
6/19 Scheduled Release: 150,000 cfs

Oahe Dam (SD)

6/18 Pool Elev: 1618.5 ft-msl
24-hr change: -0.2'
6/18 Ave Inflow: 156,000 cfs
6/18 Ave Release: 153,600 cfs
6/19 Scheduled Release: 160,000 cfs

Big Bend Dam (SD)

6/18 Pool Elev: 1419.5 ft-msl
24-hr change: -0.2'
6/18 Ave Inflow: 150,000 cfs
6/18 Ave Release: 153,000 cfs
6/19 Scheduled Release: 160,000 cfs

Fort Randall Dam (SD)

6/18 Pool Elev: 1364.5 ft-msl
24-hr change: 0.2'
6/18 Ave Inflow: 158,000 cfs
6/18 Ave Release: 143,600 cfs
6/19 Scheduled Release: 143,000 cfs

Gavins Point Dam (NE-SD)

6/18 Pool Elev: 1207.7 ft-msl
24-hr change: -0.1'
6/18 Ave Inflow: 149,000 cfs
6/18 Ave Release: 150,100 cfs
6/19 Scheduled Release: 150,000 cfs

4. Emergency Operations:

4.a.1 Nebraska

North Platte, NE - No additional advance measures planned for the North Platte City, Gothenburg, and Brady. The Central Nebraska Public Power and Irrigation District confirmed

the maximum sustained flows of approximately 5,250 cfs. Based on surveys completed and hydraulic information, and the design flow of 9,000 cfs for the temporary measures, the team has returned to Omaha today, Sunday, June 19, 2011.

Surveillance team deployed to Cooper Nuclear facility at R-548 Missouri River & Little Nemaha Levee to examine the freeboard and surface water elevation.

4.a.2 Montana

Ft. Peck Dam, MT - Continuing to monitor scour along the length of the wing wall. No other significant dam safety issues.

4.a.3 North Dakota

Williston, ND - The toe road rehab project is substantially complete (18 June 2011).

Fort Yates, ND - Standing Rock Sioux Tribe (SRST): South side work is 15% complete. They are not working today.

4.a.4 South Dakota

Pierre/Ft. Pierre, SD - Increase in water surface elevation due to increase discharge (150K to 160K cfs). No significant issues to report.

Dakota Dunes, SD - Continuing to monitor erosion along South levee, the sponsor has armored the levee slope with rip-rap to mitigate erosion damage.

Fort Randall Dam, SD - The repair of concrete slab spalling should be complete 21 June 2011, the work is being completed by project personnel. Project personnel also plugged the drain holes in the sidewalls of the spillway to reduce backflow of water surcharging the groundwater and water spouting out the piezometer holes and slab joints adjacent to the spillway. No additional significant dam safety issues to report.

4.a.5 Wyoming

NSTR

4.a.6 Iowa/Missouri

Mills County - Direct Assistance L611 - Haul road improvement project is complete.

Sand/gravel suppliers trucks are not operating today, will resume placing layer on Monday morning.

Unfilled pump requests - Harrison County, 4-8" and 2-16" Pumps CANCELLED by the State. They filled the request internally.

Atchison County, MO - Expect an official request from the State of Missouri for Atchison County, MO for 20,000 sand bags and a sand bag filling machine to be delivered to Rockport, MO on 21-Jun-2011.

4.a.7 Missouri River Levee Surveillance:

Missouri River Levee Systems (Federal Levees): Multiple teams comprised of Omaha District and out-of-District staffs continue to coordinate with local sponsors on any issues/concerns they may have, as well as conduct surveillance on levee conditions. Seepage areas/boils have been observed along the levees. Teams have been providing assistance to Sponsors when seepage areas/boils and other actionable items are observed.

Omaha-Missouri River RB: Placement of an inverted filter near I-80 should be complete by the end of June 19. The Omaha system is in good shape. Repairs to a sinkhole at the pump station near Syngenta include injection grout and gravel/stone to prevent further erosion of slab and storm-water drainage structure. Hills Bros. pointed out at least 6 pin boils are developing in their drainage pond.

L624-627/614/611-Mosquito Creek and Upper Pony Creek: A leaking flap gate at Mosquito Creek's right bank was investigated. Sponsor had unsuccessfully attempted to plug the landside with sandbags. Corps advised to attempt to close the creek side with sandbags. The National Guard and the sponsor are both performing 24-hour monitoring.

L601-Watkins Ditch RB: Boils are becoming a problem in this section. Sponsor is ringing boils with sandbags and barrels. The barrels are causing boils to move to other locations. The sponsor has been advised to cut holes in barrels to allow boils to flow. Seepage is increasing and the landside berm is becoming saturated. The sponsor is monitoring.

L594/575-BW,PV,Waubonsie: The sandbag closure on Waubonsie Creek is complete. A few boils at the confluence of Waubonsie Creek and MR need to be ringed however the majority of boils only require monitoring. Sponsor is ringing boils and has been notified that new boils need to be ringed. There are a large number of animal burrows >12" in diameter and tall vegetation makes surveillance difficult. There is approximately 3.5' of freeboard as measured by eye.

L575-BW,McKissock, Buchanan, Atchison, Hamburg: Construction of Ditch 6 levee continues. Plastic covering was not finished by the contractor and sections placed by the Contractor were not placed far enough below the waterline, leading to erosion under the plastic sheet protection. The sponsor/City and local volunteers finished the plastic covering. Water levels are down a foot or more this morning. Elev was 915.0 at 0700. Was 916.3 at 1900 on June 18. The ring levee at upper end of segment 1 complete.

Some boils on segment one were sandbagged Saturday. A single ringed boil (west side) has apparently stopped flowing material. The other ringed boil complex (east) continues to flow material. Boils at the NW section pose considerable concern. The ringed boils still are flowing at a high rate (about full faucet). Material is still being transported, both sand and some coarser particles. The ringed areas were raised again. It appears that flows may decreased but material is still being transported. Corps and local surveillance teams will keep these locations under observation.

Dirtwork resumed this morning after a one-day delay caused by rain on June 18. Sand is stockpiled on site. It will take most of today to create a haul route to the boil locations. Contractor is pumping interior borrow site to improve site access and borrow. 24-7 operations will continue unless rain occurs. City is pumping interior drainage at several locations. The pumps have not yet arrived. Sponsor began 24-hour levee surveillance. The city was notified that it needs to request National Guard assistance through the State Emergency Office.

R562-Peru: Sponsor ringed three new boils. Gauge was 1' higher than June 17.

4.b Equipment:

Sandbags

Issued: 14,637,000

On Hand: 6,923,500

Projected: 6,500,000

HESCO 3'

Issued: 8,200 LF

On Hand: 9,000 LF

Projected: 10,000 LF

HESCO 4'

Issued: 66,070 LF

On Hand: 21,950 LF

Projected: 25,000 LF

Poly Rolls

Issued: 2,836 rolls

On Hand: 1,987 rolls

Projected: 1,500 rolls

Pumps

Issued: 48

ON Hand: 4
Serviceable: 3
Projected: 20

Additional Supplies due in:

Pumps: 1 pump waiting on PTO Shaft (MRPO tech).
Sling Bags: 1,350 ea. 2,000 lb w/slugs on-hand.
Heavy Bags: 6,420 ea. (35x35x35) on-hand now.
HESCO 4': 4.750 LF ETA 20 June.
GeoTextile: 4 rolls (16' w; 500 sq ft) on-hand.

4.c Funding:

- * Total Code 200 Funding received to date for this event: \$47,412,425
- * Total Code 200 Funding waiting to be received for this event: \$0
- * Total Code 200 Funding revoked to date for this event: \$3,834,000
- * Class 219 - Emergency Operations - Direct Assistance - \$250,000 - WAD and FAD received 3/14/2011
- * Class 219 - Emergency Operations - Direct Assistance - \$3.825M - WAD received 03/15/11. FAD received 03/16/11.
- * Class 219 - Additional Funds Request on 24 March - \$231,425 - WAD and FAD received 03/24/11.
- * Class 219 - Emergency Operations - Direct Assistance - \$2.5M revoked - 4/13/11
- * Class 219 - Emergency Operations - Direct Assistance - \$100k revoked - 4/22/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$56k - MIPR - 4/30/11 - received \$45k on 4/30/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$25k - Request and received for EOC Operations and deployments on 4/30/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$14k revoked - 05/02/2011
- * Class 210 - Response Operations - Alabama Tornadoes - \$10k revoked - 05/03/2011
- * Class 200 - Emergency Operations - Response Operations - \$500,000 - WAD and FAD received on 05/25/11
- * Class 200 - Emergency Operations - Response Operations - \$750,000 - WAD and FAD received on 05/26/11
- * Class 200 - Emergency Operations - Response Operations - \$5,000,000 - FAD received 05/27/11
- * Class 200 - Emergency Operations - Response Operations - \$10,000,000 - FAD received 05/27/11
- * Class 200 - Emergency Operations - Response Operations - \$3,000,000 - request sent 05/27/11 - WAD received for \$2M received on 05/31/11 - verbal received on 06/04/11 for \$1M
- * Class 200 - Emergency Operations - Response Operations - \$10,000,000 - request sent 05/28/11 - WAD received on received 05/28/11
- * Class 200 - Emergency Operations - Response Operations - \$3,000,000 - request sent 05/31/11 - WAD received 06/01/11
- * Class 200 - Emergency Operations - Response Operations - \$6,500,000 - request sent 06/01/11 - WAD for \$3M received 06/02/011 - verbal received on 06/04/11 for \$3.5M
- * Class 200 - Emergency Operations - Response Operations - \$1,500,000 - request sent 06/03/11 - verbal received 06/03/11
- * Class 200 - Emergency Operations - Response Operations - \$1,000,000 - request sent 06/03/11 - verbal received 06/03/11 - WAD received 06/06/11
- * Class 200 - Emergency Operations - Response Operations - \$500,000 - request sent 06/04/11 - verbal received 06/04/11
- * Class 200 - Emergency Operations - Response Operations - \$2,000,000 - request sent 06/05/11 - verbal received 06/05/11
- * Class 200 - Emergency Operations - Response Operations - \$400,000 - request sent 06/06/11 - verbal received 06/07/11
- * Class 200 - Emergency Operations - Response Operations - \$50,000 - received 06/08/11

* Class 200 - Emergency Operations - Response Operations - \$980,000 - request sent 06/08/11 - WAD received 06/09/11
* Class 200 - Emergency Operations - Response Operations - \$750,000 - request sent 06/09/11 - WAD received 06/10/11
* Class 21M - Emergency Operations - Response Operations - \$210k revoke request sent 06/10/11
* Class 21M - Emergency Operations - Response Operations - \$1,000,000 revoke request sent 06/17/11
* Class 200 - Emergency Operations - Response Operations - \$750,000 - request sent 06/17/11 - verbal received 06/18/11

* Total Code 500 Funding received to date: \$827,904
* Class 520 Funding - Advance Measures - Technical assistance - \$100K. WAD and FAD received on 3/2/11.
* Class 52A Additional Request for Funding - Advance Measures - Technical assistance - \$100K. WAD and FAD received on 3/10/11.
* Class 520 Additional Request for Funding - Advance Measures - Technical assistance - \$101,640. WAD and FAD received on 3/24/11.
* Class 519 Funding - Advance Measures - Direct Assistance - \$376,264. WAD and FAD received on 3/28/11.
* Class 520 Funding - Advance Measures - Technical assistance - \$110k - FAD received on 05/12/11.
* Class 510 Funding - Advance Measures - Direct assistance - \$40k - FAD received on 05/26/11

Daily Labor Burn Rate: \$137,500
Daily Contract Burn Rate: \$420,000
Combined Daily Burn Rate: \$557,500

4.d Number of Personnel Supporting EOC Operations:

Working in field: 57
Working in District: 50
Outside District: 1

5.a EOC Activation - Level IV - 24 hour Activation (Shifts: 0700-1930)

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Hydro Status:

River (Flood Stage/Current Stage/Forecast/Date of Peak: Peak Stage)

Montana

- * Yellowstone River at Forsyth/10.0/10.42/receding/
- * Yellowstone River at Miles City/13.0/13.3/receding/
- * Yellowstone River at Glendive/53.5/52.4/receding/
- * Yellowstone River near Sidney/19.0/17.48/rising/Jun 19: 17.7'
- * Gallatin River near Logan/8.0/7.94/rising/Jun 22: 9.3'
- * Missouri River near Toston/10.5/10.42/rising/Jun 22: 11.3'
- * Missouri River near Wolf Point/13.0/14.24/steady/Jun 20: 14.3'
- * Poplar River near Poplar/15.5/11.57/rising/Jun 21: 14.5'
- * Missouri River near Culbertson/19.0/16.86/slow rise/Jun 22: 17.3'
- * Milk River at Nashua/20.0/25.25/rising/Jun 20: 25.5'

Wyoming

- * North Platte River at Saratoga/8.5/9.91/rising/Jun 20: 10.84'
- * North Platte River nr Sinclair/9.0/10.66/rising/Jun 21: 12.27'
- * Laramie River at Laramie/5.0/5.23/rising/Jun 23: 6.29'

North Dakota

- * Missouri River at Williston/22/30.21/steady/Jun 20: 30.4'
- * Missouri River at Bismarck/16.0/18.82/steady/
- * James River at Jamestown/12.0/11.54 (1,840 cfs)/steady/

South Dakota

- * Missouri River at Pierre/13.0/19.2/steady/
- * Missouri River near Greenwood/30.0/38.03/steady/
- * Missouri River near Gayville/55.0/56.21/steady/

Nebraska

- * North Platte River near Mitchell/7.5/9.16/slight rise/June 21: 9.72'
- * North Platte River at North Platte/6.0/7.49/receding/June 20: 7.3'
- * Missouri River at Sioux City/30.0/33.5/steady/
- * Missouri River at Decatur/35.0/38.31/cresting/
- * Missouri River near Blair/26.5/31.8/slight rise/Jun 20: 31.9'
- * Missouri River at Omaha/29.0/33.39/steady/Jun 19: 33.4'
- * Missouri River at NE City/18.0/26.22/steady/
- * Missouri River at Brownville/33.0/44.51/cresting/Jun 19: 44.6'
- * Missouri River at Rulo/17.0/25.19/rising/Jun 20: 26.7'

Tributary Reservoirs:

Pipestem Reservoir (ND) fell 0.19' to elevation 1483.31 ft-msl. Inflows are near 170 cfs and releases are 600 cfs. 61.5% of the flood pool is occupied.

Jamestown Reservoir (ND) fell 0.26' yesterday to elevation 1443.79 ft-msl. Inflows are approximately 150 cfs and releases are 1,200 cfs. The combined Jamestown/Pipestem release is approximately 1,800 cfs. 38.7% of the flood pool is occupied.

Heart Butte (ND) Reservoir fell 0.21 ft yesterday with 4.7% of its flood control pool occupied. Pactola (SD) dropped 0.06 ft yesterday with 2.0% of the flood pool occupied. Shadehill (SD) fell 0.06 ft yesterday with 2.5% of the flood pool occupied.

Yellowtail (MT) rose 0.48 ft to elevation 3636.48 ft-msl with inflows of 18,200 cfs and releases of 15,400 cfs. 91.4% of its multipurpose pool is occupied.

Tiber (MT) rose 0.4 ft to elevation 3005.15 ft-msl. Inflows were 5,020 cfs and releases are 750 cfs as the USBR stores water to help reduce inflows to Fort Peck. 59.4% of its flood pool is occupied.

Clark Canyon (MT) rose 0.45 ft to elevation 5550.53 ft-msl with inflows of 1,508 cfs and releases of 288 cfs as the USBR stores water to help reduce inflows to Fort Peck. 29.4% of its flood control pool is occupied.

Canyon Ferry (MT) rose 0.75 ft to elevation 3794.93 ft-msl with inflows of 28,264 cfs and releases of 16,030 cfs. After Canyon Ferry inflows have peaked, 100 kaf of flood storage in Canyon Ferry will be filled. 96.3% of its multipurpose pool is occupied.

Glendo (WY) rose 0.07 ft to elevation 4638.77 ft-msl with inflows of 8,800 cfs and releases of 7,500 cfs. 17.6% of its flood control pool is occupied.



**US Army Corps
of Engineers**
Omaha District

U.S. Army Corps of Engineers, Omaha District

Missouri River Basin

Mainstem and Tributary Reservoir Bulletin

Project Data Date/Time: 06/19/11 12:00 AM

Bulletin Updated: 6/19/11 9:16 AM

Project	Project Information				Current Data					Occupied Storage		
	Elevations (ft msl)		Storage		Elevation (ft msl)	Dly Elev. Change	Storage (ac-ft)	Inflow (dsf)	Release (dsf)	MP (%)	FC (ac-ft)	FC (%)
	MP	FC	MP	FC								
MRR - Missouri River Mainstem Projects												
*Please note Mainstem and USBR data is calculated manually and will populate before 12:00 p.m.												
Fort Peck	2234.0	2250.0	14,788,000	18,463,000	2252.10	-0.15	18,985,000	50,000	65,500	100.0	4,197,000	114.2
Garrison	1837.5	1854.0	18,109,625	23,820,730	1853.90	0.14	23,766,000	169,000	150,000	100.0	5,656,375	99.0
Oahe	1607.5	1620.0	18,834,035	23,136,960	1618.47	-0.21	22,624,000	156,000	153,600	100.0	3,789,965	88.1
Big Bend	1420.0	1423.0	1,621,484	1,798,614	1419.54	-0.19	1,615,000	150,000	153,000	99.6	0	0.0
Fort Randall	1350.0	1375.0	3,124,368	5,418,186	1364.49	0.22	4,388,000	158,000	143,600	100.0	1,263,632	55.1
Gavins Point	1204.5	1210.0	320,971	469,928	1207.68	-0.12	385,000	149,000	150,100	100.0	64,029	43.0
System Totals							71,763,000					
NWO - USBR Section 7 Projects												
Tiber	2993.0	3012.5	925,649	1,328,723	3005.15	0.40	1,165,156	5,020	750	100.0	239,507	59.4
Clark Canyon	5546.1	5560.4	174,367	253,442	5550.53	0.45	197,643	1,508	288	100.0	23,276	29.4
Canyon Ferry	3797.0	3800.0	1,891,888	1,992,977	3794.93	0.75	1,822,706	28,264	16,030	96.3	0	0.0
Boysen	4725.0	4732.2	741,594	892,226	4706.43	0.14	445,052	6,792	5,825	60.0	0	0.0
Buffalo Bill	5393.5	5393.5	646,565	646,565	5353.63	-0.12	359,558	5,314	5,687	55.6	-	-
Yellowtail	3640.0	3657.0	1,070,000	1,328,000	3636.48	0.48	978,232	18,133	15,378	91.4	0	0.0
Jamestown	1429.8	1454.0	31,510	221,000	1443.79	-0.26	104,868	42	1,198	100.0	73,358	30.7
Heart Butte	2064.4	2094.5	67,000	214,000	2066.51	-0.21	73,918	369	737	100.0	6,918	4.7
Keyhole	4099.3	4111.5	194,000	334,000	4097.76	0.00	174,506	0	0	90.0	0	0.0
Pactola	4580.2	4621.5	56,000	99,000	4581.27	-0.06	56,879	169	0	100.0	879	2.0
Shadehill	2271.9	2302.0	120,000	350,000	2273.12	-0.06	125,843	320	477	100.0	5,843	2.5
Glendo	4635.0	4653.0	518,000	790,000	4638.77	0.07	565,870			100.0	47,870	17.6
NWO - USACE Tributary Projects												
Bowman-Haley	2754.8	2777.0	18,765	91,482	2755.81	-0.08	20,574	130	193	100.0	1,809	2.5
Pipestem	1442.5	1496.3	8,944	142,107	1483.31	-0.19	90,838	-338	602	100.0	81,894	61.5
Chatfield	5432.0	5500.0	27,428	234,207	5431.00	0.01	26,011	44	50	94.8	0	0.0
Cherry Creek	5550.0	5598.0	12,805	133,134	5549.93	-0.01	12,740	9	15	99.5	0	0.0
Bear Creek	5558.0	5635.5	1,882	30,586	5558.37	0.03	1,921	22	21	100.0	39	0.1
Papio #11	1121.0	1142.0	3,054	16,907	1121.36	0.00	3,195	3	3	100.0	141	1.0
Papio #16	1104.0	1121.0	1,211	4,782	1104.08	0.05	1,221	3	0	100.0	10	0.3
Papio #18	1110.0	1128.2	2,916	10,512	1092.20	0.00	262	0	0	9.0	0	0.0
Papio #20	1095.8	1113.1	2,536	8,611	1096.01	0.13	2,564	8	0	100.0	28	0.5
Cottonwood	3875.0	3936.0	655	8,385	3856.51	0.01	0	0	0	0.0	0	0.0
Cold Brook	3585.0	3651.4	520	7,200	3582.89	0.00	445	0	0	85.6	0	0.0
Lake Audubon	1847.0	1847.0	323,690	323,690	1849.4	0	INFLOW AND OUTFLOW NOT CALCULATED					
Lake Pocasse	1617.0	1617.0	11,000	11,000	POOL ELEVATION READ MONTHLY BY PROJECT OFFICE							
Salt Creek #02	1335.0	1350.0	1,100	4,957	1333.89	0.09	928	7	0	84.3	0	0.0
Salt Creek #04	1307.4	1322.5	2,531	9,660	1307.19	0.18	2,465	28	0	97.4	0	0.0
Salt Creek #08	1287.8	1302.0	1,780	8,375	1287.59	-0.16	1,725	2	22	96.9	0	0.0
Salt Creek #09	1271.1	1285.0	1,451	5,864	1271.28	0.06	1,486	8	2	100.0	35	0.8
Salt Creek #10	1244.9	1262.0	1,629	7,468	1245.31	0.11	1,717	16	3	100.0	88	1.5
Salt Creek #12	1232.9	1252.0	1,808	9,415	1233.11	0.07	1,852	9	1	100.0	44	0.6
Salt Creek #13	1341.0	1355.0	2,161	7,182	1340.98	0.10	2,155	12	0	99.7	0	0.0
Salt Creek #14	1244.3	1263.5	7,500	27,597	1244.40	0.05	7,570	18	0	100.0	70	0.3
Salt Creek #17	1242.4	1266.0	783	6,628	1243.17	0.62	905	49	9	100.0	122	2.1
Salt Creek #18	1284.0	1311.0	25,088	96,759	1284.37	0.09	25,774	104	19	100.0	686	1.0



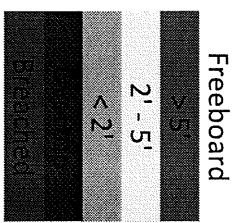
Bulletin Updated: 6/19/11 8:50 AM

Project	Project Information					Current Data (as of 00:00)					Occupied Storage							
	Elevations (ft msl)			Storage Capacity (ac-ft)		Elevation (ft msl)	Dly Elev. Change	Total Occupied Storage (ac-ft)	Previous Day Avg.		Multi-Use		Annual FC		Exclusive			
	Top of Multi-Use	Top of Annual FC	Top of Exclusive	Multiple Use	Annual FC				Exclusive	(ac-ft)	Release (dsf)	(ac-ft)	Annual FC	(ac-ft)	Release (dsf)	(ac-ft)	Annual FC	Exclusive
Project Data Date/Time																		
TODAY																		
6/19/2011																		
Fort Peck	2234.0	2246.0	2250.0	14,788,000	2,704,000	971,000	2252.10	-0.15	18,985,000	50,000	65,500	14,788,000	100.0	2,704,000	100.0	1,493,000	153.8	
Garrison	1837.5	1850.0	1854.0	18,110,000	4,222,000	1,489,000	1853.90	0.14	23,766,000	169,000	150,000	18,110,000	100.0	4,222,000	100.0	1,434,000	95.3	
Oahe	1607.5	1617.0	1620.0	18,834,000	3,201,000	1,102,000	1618.47	-0.21	22,624,000	156,000	153,600	18,834,000	100.0	3,201,000	100.0	589,000	53.4	
Big Bend	1420.0	1422.0	1423.0	1,621,000	117,000	60,000	1419.54	-0.19	1,615,000	150,000	153,000	1,615,000	99.6	0	0.0	0	0.0	
Fort Randall	1350.0	1365.0	1375.0	3,124,000	1,309,000	985,000	1364.49	0.22	4,389,000	158,000	143,600	3,124,000	100.0	1,264,000	96.6	0	0.0	
Gavins Point	1204.5	1208.0	1210.0	307,000	86,000	57,000	1207.68	-0.12	385,000	149,000	150,100	307,000	100.0	78,000	90.7	0	0.0	
System Totals				56,784,000	11,639,000	4,664,000			71,763,000			56,778,000		11,469,000		3,516,000		
YESTERDAY																		
6/18/2011																		
Fort Peck	2234.0	2246.0	2250.0	14,788,000	2,704,000	971,000	2252.25	0.00	19,018,000	67,000	65,600	14,788,000	100.0	2,704,000	100.0	1,000,188	103.0	
Garrison	1837.5	1850.0	1854.0	18,110,000	4,222,000	1,489,000	1853.76	0.02	23,730,000	158,000	148,600	18,110,000	100.0	4,222,000	100.0	1,398,000	93.9	
Oahe	1607.5	1617.0	1620.0	18,834,000	3,201,000	1,102,000	1618.68	0.07	22,621,000	156,000	150,500	18,834,000	100.0	3,201,000	100.0	586,000	53.2	
Big Bend	1420.0	1422.0	1423.0	1,621,000	117,000	60,000	1419.73	0.03	1,622,000	150,000	148,600	1,621,000	100.0	1,000	0.9	0	0.0	
Fort Randall	1350.0	1365.0	1375.0	3,124,000	1,309,000	985,000	1364.27	0.11	4,360,000	163,000	143,200	3,124,000	100.0	1,236,000	94.4	0	0.0	
Gavins Point	1204.5	1208.0	1210.0	307,000	86,000	57,000	1207.80	0.11	388,000	152,000	150,300	307,000	100.0	81,000	94.2	0	0.0	
System Totals				56,784,000	11,639,000	4,664,000			71,739,000			56,784,000		11,445,000		2,984,188		
DAM INFORMATION																		
RECENT ELEVATIONS																		
06/18 06/19 06/19 06/19 06/19																		
22.00 22.00 22.00 22.00 22.00																		
2252.15 2252.10 2252.10 2252.10 2252.10																		
Fort Peck																		
1853.88 1853.90 1853.90 1853.99 1853.98																		
Oahe																		
1618.47 1618.47 1618.47 1618.54 1618.61																		
Big Bend																		
1419.57 1419.54 1419.54 1419.60 1419.59																		
Fort Randall																		
1364.51 1364.49 1364.64 1364.67 1364.68																		
Gavins Point																		
1207.69 1207.68 1207.68 1207.68 1207.66																		



US Army Corps of Engineers®

Current Stage		NWS 5-Day Forecast Peak	
Gage	As of: 10:00	Stage	Date
Williston	31.21	30.4	20-Jun
Omaha	33.39	33.4	Peaking
Nebraska City	26.20	26.2	Steady
Brownville	44.39	44.5	19-Jun
Rulo	25.2	26.0	24-Jun



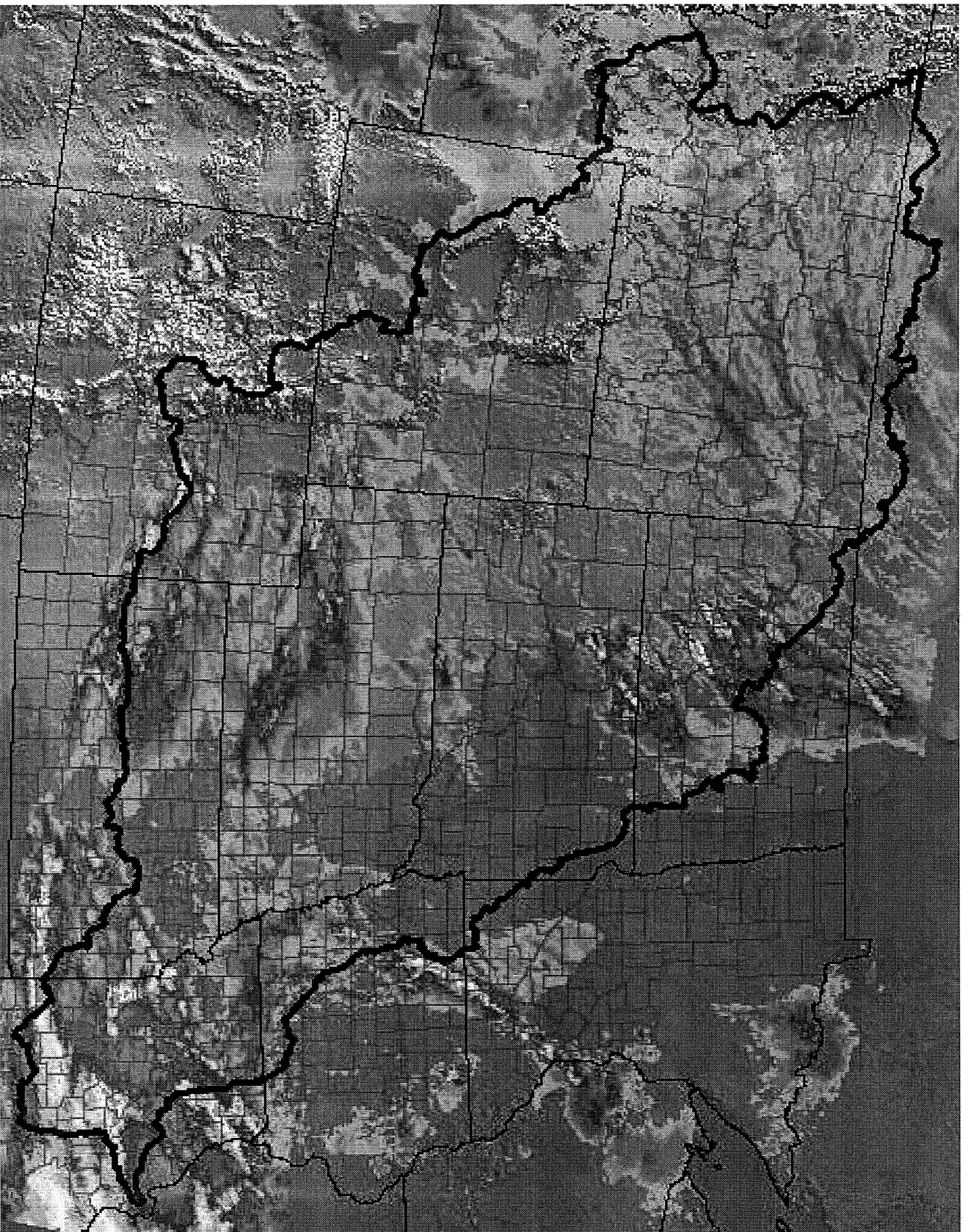
6/19/2011 10:00

Missouri River Federal Levee	Stream Gage Location	Likely Range of Stage with normal precipitation (ft)	Overtop Stage Previous Estimate	Overtop Stage FreeBoard Survey	Current FreeBoard (feet)	FreeBoard w/ NWS 5-Day Forecast (feet)
Williston Levee	Williston	30	n/a	32	0.8	1.6
Omaha Levee D/S 275	Omaha	34	40	38	4.6	4.6
Omaha Flood Wall	Omaha	34	41	41	7.6	7.6
Council Bluffs Ind Levee	Omaha	34	n/a	36.8	3.4	3.4
Council Bluffs Fed Levee	Omaha	34	40	40.2	6.8	6.8
L627	Omaha	34	36	38	4.6	4.6
L624	Omaha	34	36	38	4.6	4.6
L611-614	Omaha	34	36	38	4.6	4.6
R616	Omaha	34	36	36.6	3.2	3.2
R613	Omaha	34	36	36.8	3.4	3.4
L601	Nebraska City	27	28+	29	2.8	2.8
L594	Nebraska City	27	28+	30	3.8	3.8
L575	Nebraska City	27	27	27	BREACHED	BREACHED
R573	Nebraska City	27	27	28.2	2.0	2.0
R562	Nebraska City	27	28+	28.7	2.5	2.5
R548	Brownville	43	44	43.9	BREACHED	BREACHED
L550	Brownville	43	42.8	43.7	BREACHED	BREACHED
L536	Brownville	43	44.3	43.9	BREACHED	BREACHED
R520	Rulo	25.5	27+	30	4.8	4.0

* NOTE: FreeBoard survey values may not include all low areas. Overtopping could occur at stages approximately 1 foot below surveyed value.

7 Day Temperature Forecasts (High/Low)						
19-Jun-11						
Location	Sun	Mon	Tue	Wed	Thu	Fri
	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun
Helena, MT	63/46	69/50	76/50	81/54	77/51	70/49
Livingston, MT	63/45	68/42	74/44	78/49	80/51	77/50
Billings, MT	67/49	72/48	78/53	82/55	85/56	84/57
West Yellowstone, MT	54/34	61/36	66/37	72/41	72/40	66/39
Cody, WY	59/46	66/47	71/49	77/52	79/53	78/50
Sheridan, WY	65/50	66/48	71/50	75/49	81/52	80/52
Casper, WY	68/46	65/44	69/46	78/49	83/51	85/50
Laramie, WY	66/40	56/42	65/43	72/43	78/46	80/45

Sat .	Norm	
25-Jun	Max/Min	
71/NA	77/48	
78/NA	77/47	
86/NA	82/53	
66/NA	NA/NA	
78/NA	77/50	
80/NA	80/49	
85/NA	82/49	
77/NA	75/44	

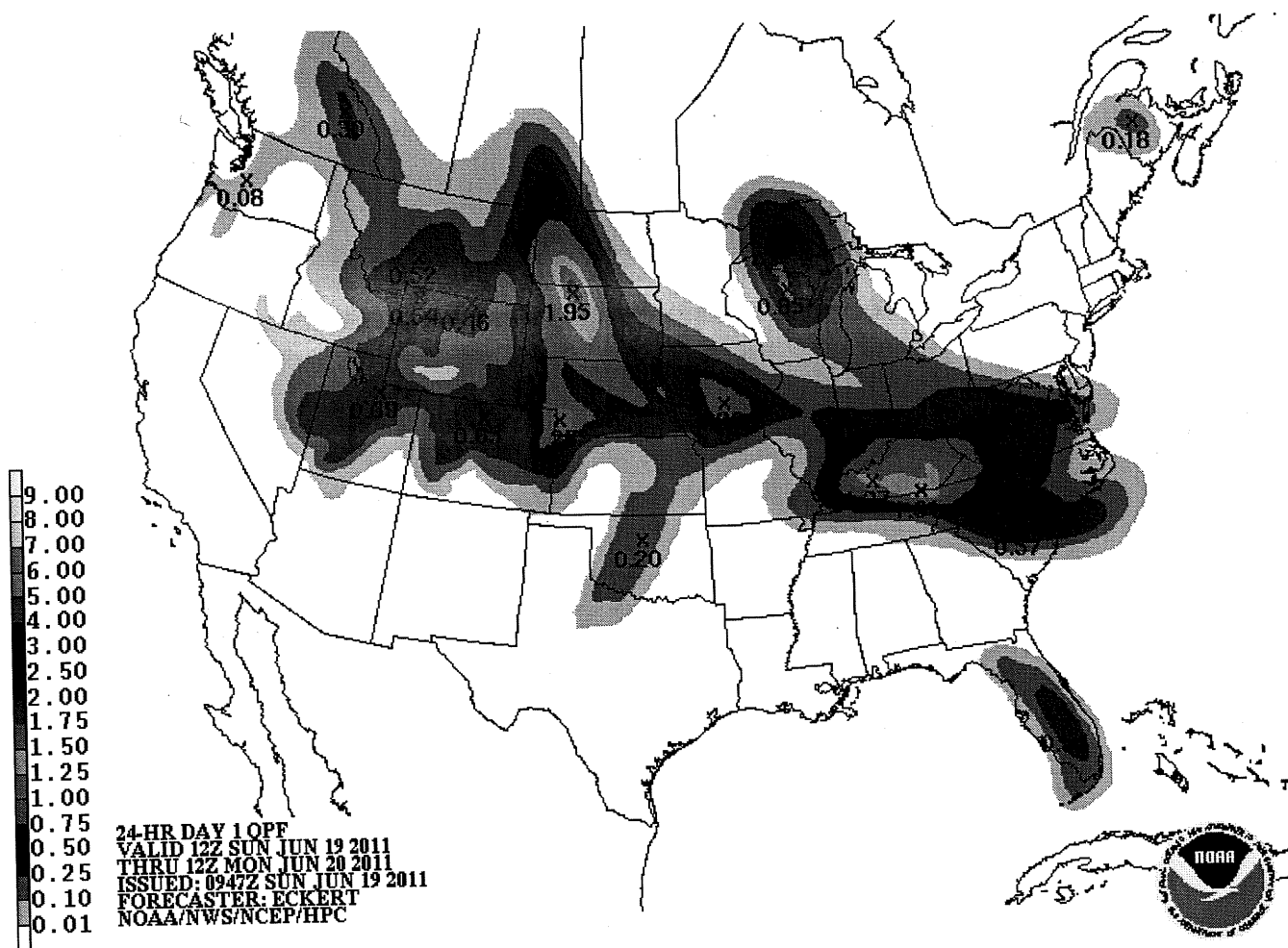


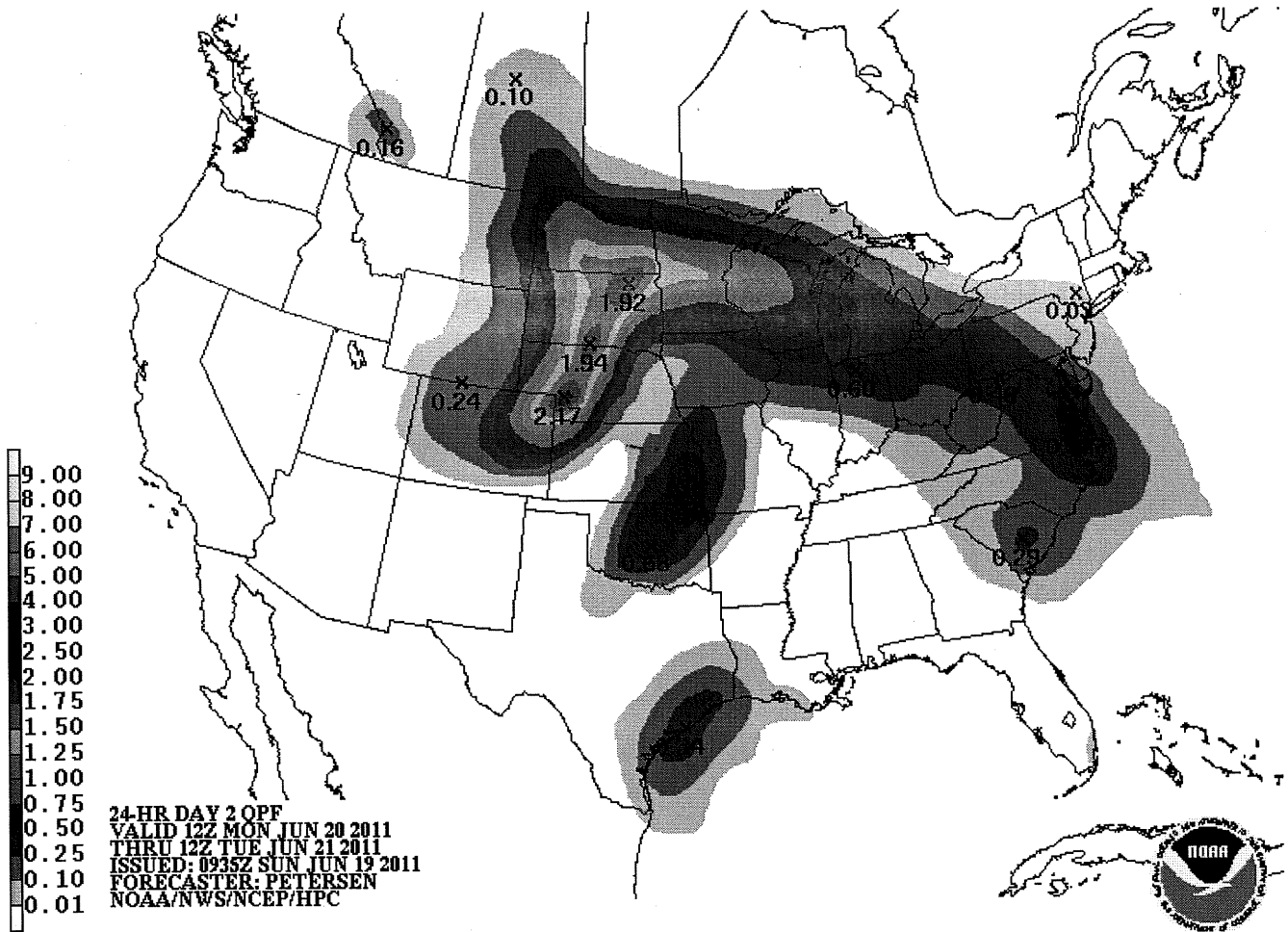
0.01 0.05 0.10 0.25 0.50 0.75 1.00 1.50 2.00 2.50 3.00 4.00 5.00 6.00 8.00 +

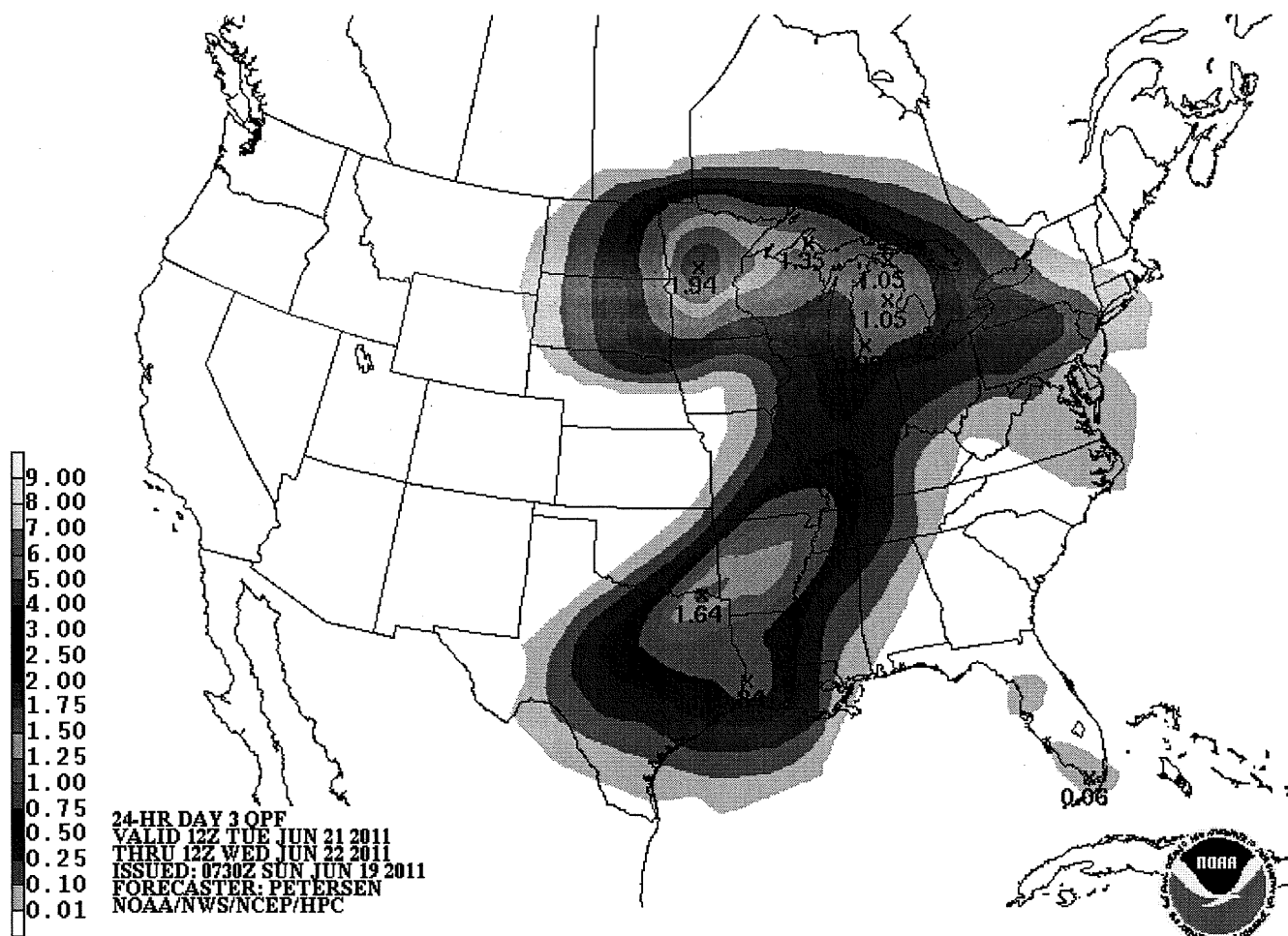
MBRFC 24-Hour Gage Biased Estimated Rainfall (inches)

Ending: 6/19/2011 at 7:00AM CDT

Created 6/19/2011 at 7:17 AM CDT







Missouri River Basin Water Management Situation Report – 6-19-11

Reservoir Conditions

The upper three reservoirs of the Missouri River Mainstem Reservoir System provide the bulk of the storage of water. All three are in their exclusive flood control zones, with Fort Peck passing its spillway crest (continuing up on raised spillway gates) and the other two being near their spillway crests. Table 1 summarizes the situation as of 0000 hours this morning. The relatively high inflows that have been coming into Fort Peck and Garrison Reservoirs will likely continue, although inflows into Fort Peck declined today. More details on the reservoirs can be found on the daily bulletin prepared by the Missouri River Basin Water Management Division at: <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULLOMR1>.

Table 1. Key Reservoir Data (through 0000 hrs 6/19/11)

Reservoir	Inflow kcfs	Outflow kcfs	Top of Spillway	Current Level feet msl	24-hr Change feet
			Gates feet msl		
Fort Peck	50.0	65.5	2250	2252.1	-0.1
Garrison	169.0	150.0	1854	1853.9	0.1
Oahe	156.0	153.6	1620	1618.5	-0.2
Big Bend	150.0	153.0	1423	1419.5	-0.2
Fort Randall	158.0	143.6	1375	1364.5	0.2
Gavins Point	149.0	150.1	1210	1207.7	-0.1

Based on the current level data for the upper three reservoirs, the amount of remaining storage has been changing in its distribution among the upper three, larger reservoirs. Fort Peck remains in surcharge, though outflows did exceed inflows today. With the increased releases from Fort Peck and the increase in tributary inflows, Garrison Reservoir is rising and will be going into surcharge over the next week and a half. Oahe will not be surcharged because there are no plans at this time to use its spillway, which would result in the raised gates and the potential to surcharge that reservoir. The lower three reservoirs have much less capability to store the inflows that are coming into the Missouri River Mainstem Reservoir System, with Fort Randall Reservoir having the greater amount. As of today, the stored water has not yet entered the exclusive flood control zones of the three smaller reservoirs; therefore, 100 percent of their exclusive flood control storage remains available. Table 2 summarizes the storage volumes of all six System reservoirs, with the last column listing the amount of exclusive flood control storage that remains as of today. Spillways are now being used at five of the six reservoirs, with no plans to use the Oahe spillway at this time.

Table 2. Reservoir Storage Data (through 0000 hrs 6/19/11)

Reservoir	Current kAF	Total kAF	Remaining kAF	Exclusive kAF	% Excl Left
Fort Peck	18,985	18,463	-522	971	-54
Garrison	23,766	23,821	55	1,489	4
Oahe	22,624	23,137	513	1,102	47
Big Bend	1,615	1,798	183	60	100
Fort Randall	4,388	5,418	1,030	985	100
Gavins Point	385	450	65	57	100

Releases from all six reservoirs are currently exceeding records prior to 2011. Table 3 provides release data for all six reservoirs to provide some perspective on the changes that will be happening over the next 2 weeks. Beginning June 17, releases from Oahe and Big Bend reservoirs were increased to 160,000 cfs to gain storage space for future rainfall events affecting Oahe and Garrison reservoirs levels. Releases from Fort Peck will be reduced to 60,000 cfs on Monday as inflows continue to decline. The other reservoir releases are currently being maintained at their anticipated maximum releases. Full listing of the reservoir data through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>.

Table 3. Reservoir Release Comparisons (through 0000 hours 6/19/11)

Reservoir	Yesterday kcfs	Forecast Today kcfs	7 days out 26 June kcfs	14 days out 03 July kcfs	Pre-2011 Record kcfs
Fort Peck	65.5	65	60	60	35
Garrison	150.0	150	150	150	65
Oahe	153.6	160	160	160	59
Big Bend	153.0	160	160	160	74
Fort Randall	143.6	143	148	148	67
Gavins Point	150.1	150	150	150	70

River Conditions

Levees have been constructed by the Corps at numerous locations, resulting primarily from the releases from Garrison, Oahe, and Gavins Point Dams. Many communities along the lower Missouri River are currently experiencing Missouri River flows that are above flood stage by several feet. The flood stages currently being experienced will be exceeded as Missouri River Mainstem Reservoir System releases move through their downstream reaches and inflows from the downstream reaches and localized precipitation joins these high releases. Table 4 summarizes the current conditions as of 0600 hours this morning and the Corps' current forecast for crest stages.

Table 4. Missouri River Stage Data for 6/19/11 at 0600 CDT

Location	Flood Stage	Current Stage	Forecast Crest Stage	Date of Crest Stage
Bismarck, ND	16	18.8	20.6	mid-Jun
Pierre, SD	13	19.1	18.7	mid-Jun
Sioux City, IA	30	33.5	35-37	mid-Jun thru July
Decatur, NE	35	38.3	40-42	mid-Jun thru July
Omaha, NE	29	33.2	34-36	mid-Jun thru July
Nebraska City, NE	18	26.2	27-28+	mid-Jun thru July
St. Joseph, MO	17	23.9	27-32	mid-Jun thru July
Kansas City, MO	32	26.6	30-39	mid-Jun thru July
Waverly, MO	20	24.9	27-31	mid-Jun thru July
Boonville, MO	21	21.7	27-33	mid-Jun thru July
Hermann, MO	21	21.5	27-33	mid-Jun thru July

Figures 1 and 2 present the plots of the 0600 hour stages at Bismarck and Pierre, respectively. The stages at Bismarck have not reached the initial estimated levels as the Garrison Reservoir releases have increased. The reduction is likely due to the scouring of the channel as the flows are well above the levels in recent years. The stages at Pierre have closely followed the estimated levels, being just slightly over the initial estimate for crest elevation, as the upstream Oahe Reservoir releases have reached the 150-kcfs level. Increasing releases from Oahe Reservoir to 160,000 cfs has slightly increased stages at Pierre. However, the stages at both cities are still about 3 feet below the constructed levee crests.

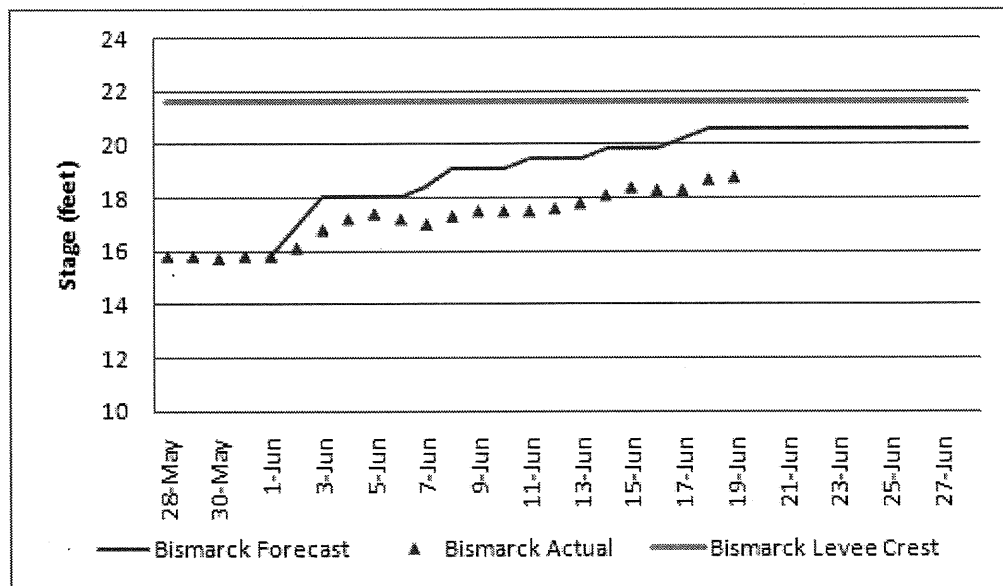


Figure 1. Missouri River stages at Bismarck, North Dakota.

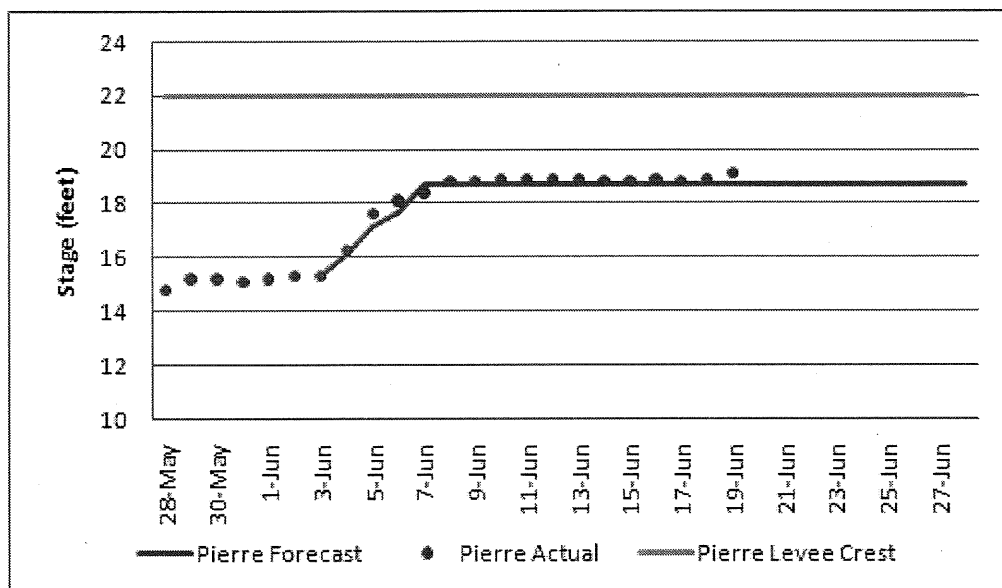


Figure 2. Missouri River stages at Pierre, South Dakota.

Information on Current Mountain Snowpack and Forecasted Rainfall

Releases from the System reservoirs are based on snowpack and rainfall forecasts in the Missouri River basin. An updated snowfall forecast has not yet been prepared today; however, the Hydrometeorological Prediction Center (HPC) of NOAA prepares a rainfall forecast daily for up to the next 5 days, with an accumulated figure also presented on its website. The next 5 days do not look good as widespread moderate to heavy rain is forecasted for much of the Missouri River Basin. Inflows from the heavier forecasted areas would drain into all reservoirs in the System except Fort Peck. Figure 3 is the accumulated 5-day rainfall forecast for today by HPC, and Figure 4 is the June 17 mountain snowpack update by the Corps.

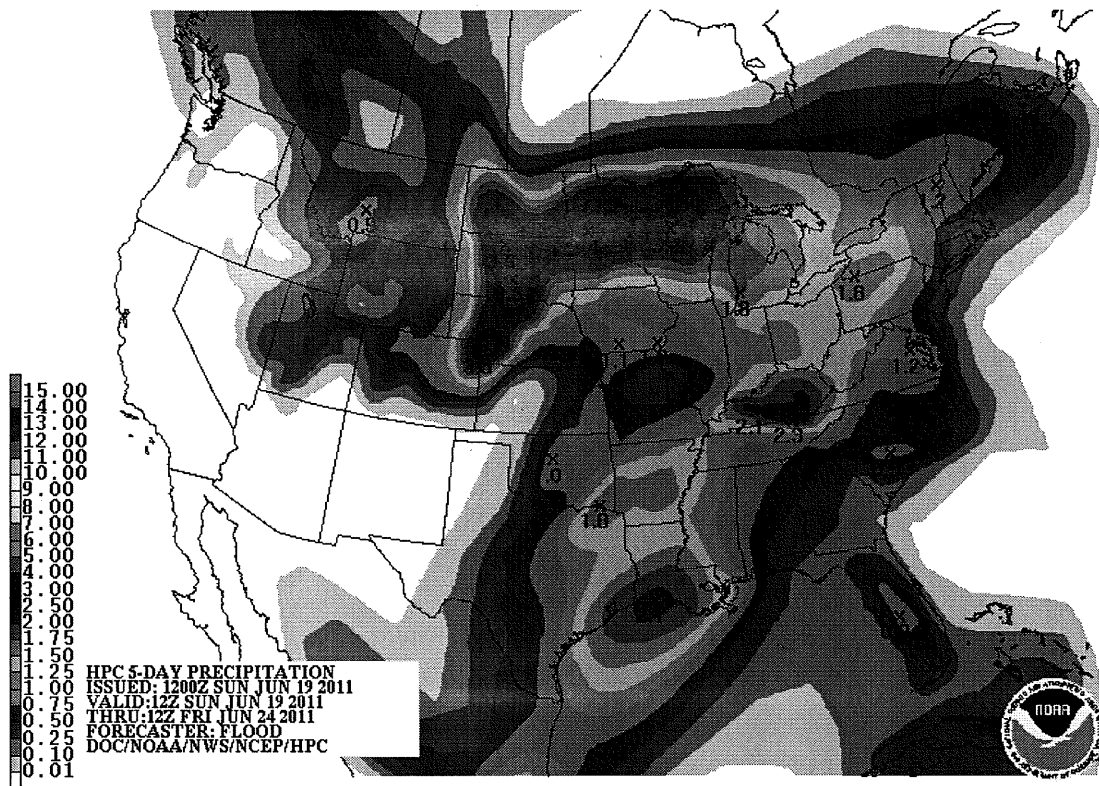


Figure 3. 5-day total QPF ending 0700 Thursday, June 23, 2011.

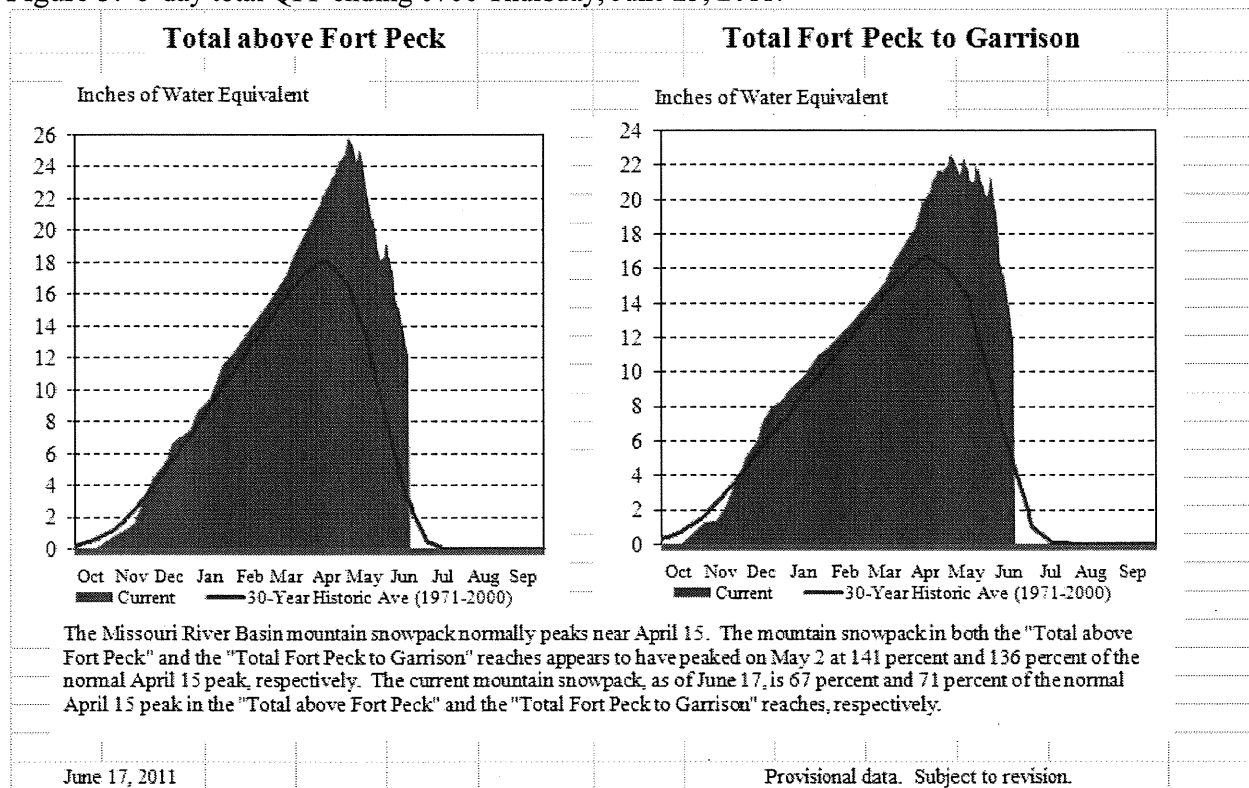


Figure 4. Missouri River basin mountain snowpack water content summary, 2010-2011 – June 17, 2011.

Current Actions and Notable Information

Levee construction been completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System reservoirs. Floodplain evacuations have been ongoing for many lower-lying areas along the lower Missouri River. The most recent of these levees, the Hamburg levee, has also been completed. The failure of levee L-575 occurred at river stages just under the maximum stage in 2010.

Figure 5 is a plot showing the Nebraska City (just across the river from the upper reaches of L-575) 0600 stages for 2010 and 2011 (through today), both years with high river stages. This figure shows that the river level is now above the 2010 maximum.

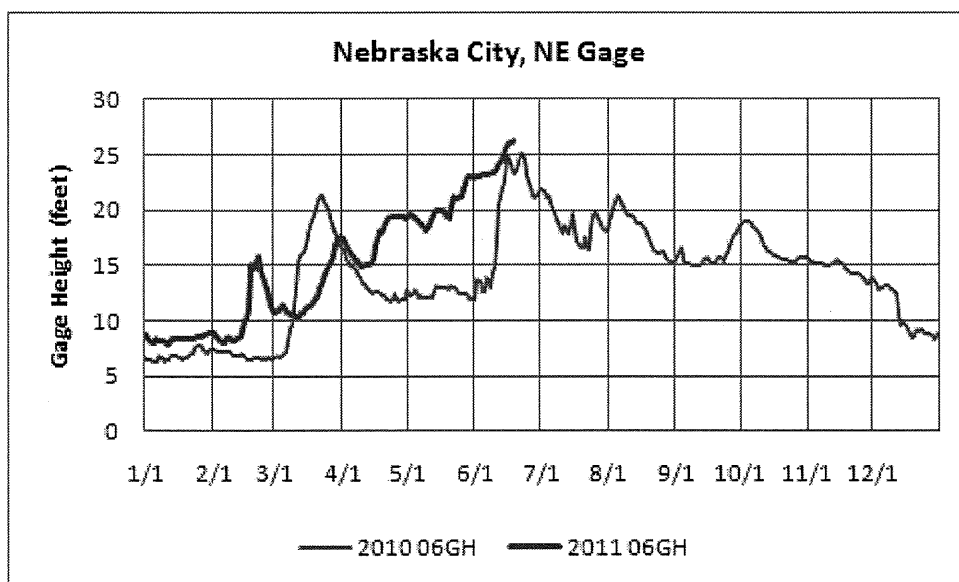


Figure 5. River stages at Nebraska City, Nebraska for 2010 and 2011.

A second levee failed at Big Lake, Missouri Monday, June 13. This location is across the river from Rulo, Nebraska. The gage plot for this location is shown below as Figure 6. Another factor, such as duration of water against the levee or back-to-back years with water against the levee appears to be playing a role in the failure of this levee as well as the levee near Hamburg.

Today, L-550 located north of Highway 136 in Atchison County, Missouri overtopped. Water levels at the Brownsville gauge increased approximately two feet in a 24-hour period from 5:30 a.m. 18 June to 5:30 a.m. 19 June.

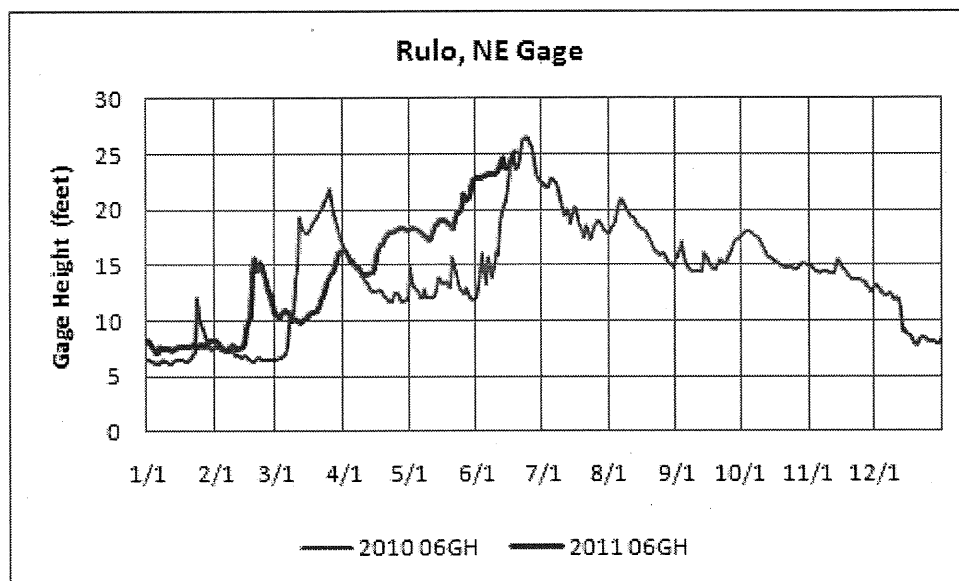


Figure 6. River stages at Rulo, Nebraska for 2010 and 2011.

Moderate rains fell over Eastern Montana, central North Dakota and most of the lower basin between 0700 hours yesterday and today. Figure 7 shows the amount of rain that fell in the basin and surrounding area of the Central Region of the United States.

NWS Central Region: Current 1-Day Observed Precipitation
Valid at 6/19/2011 1200 UTC- Created 6/19/11 15:41 UTC

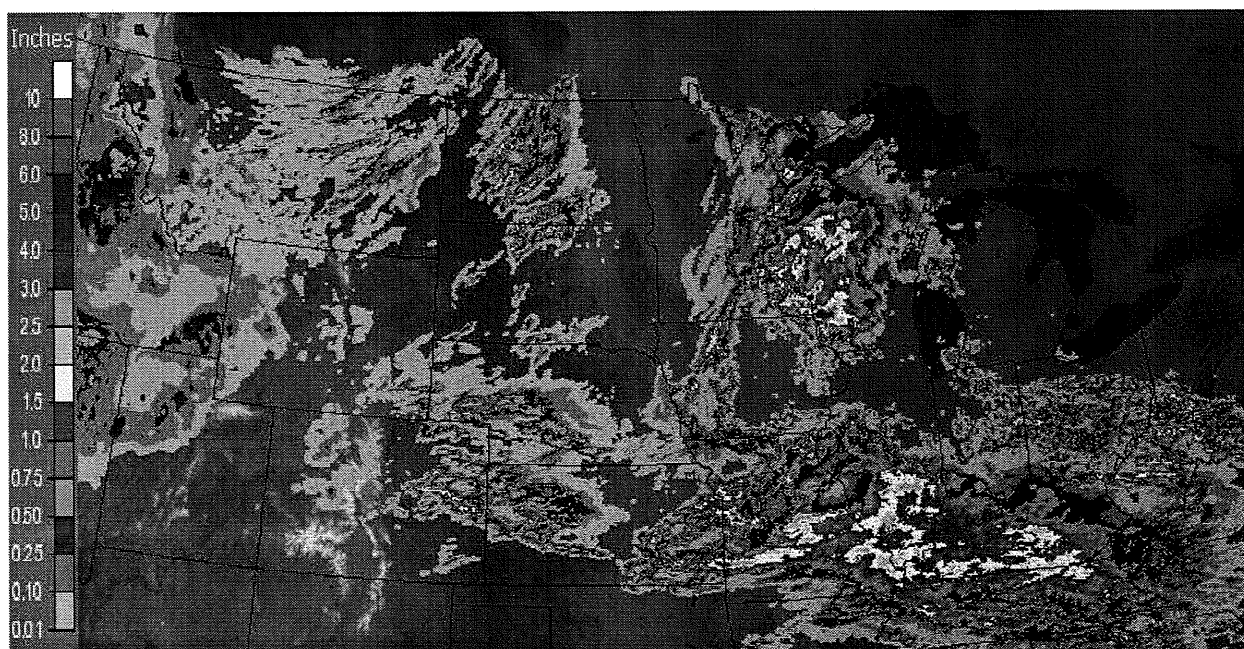
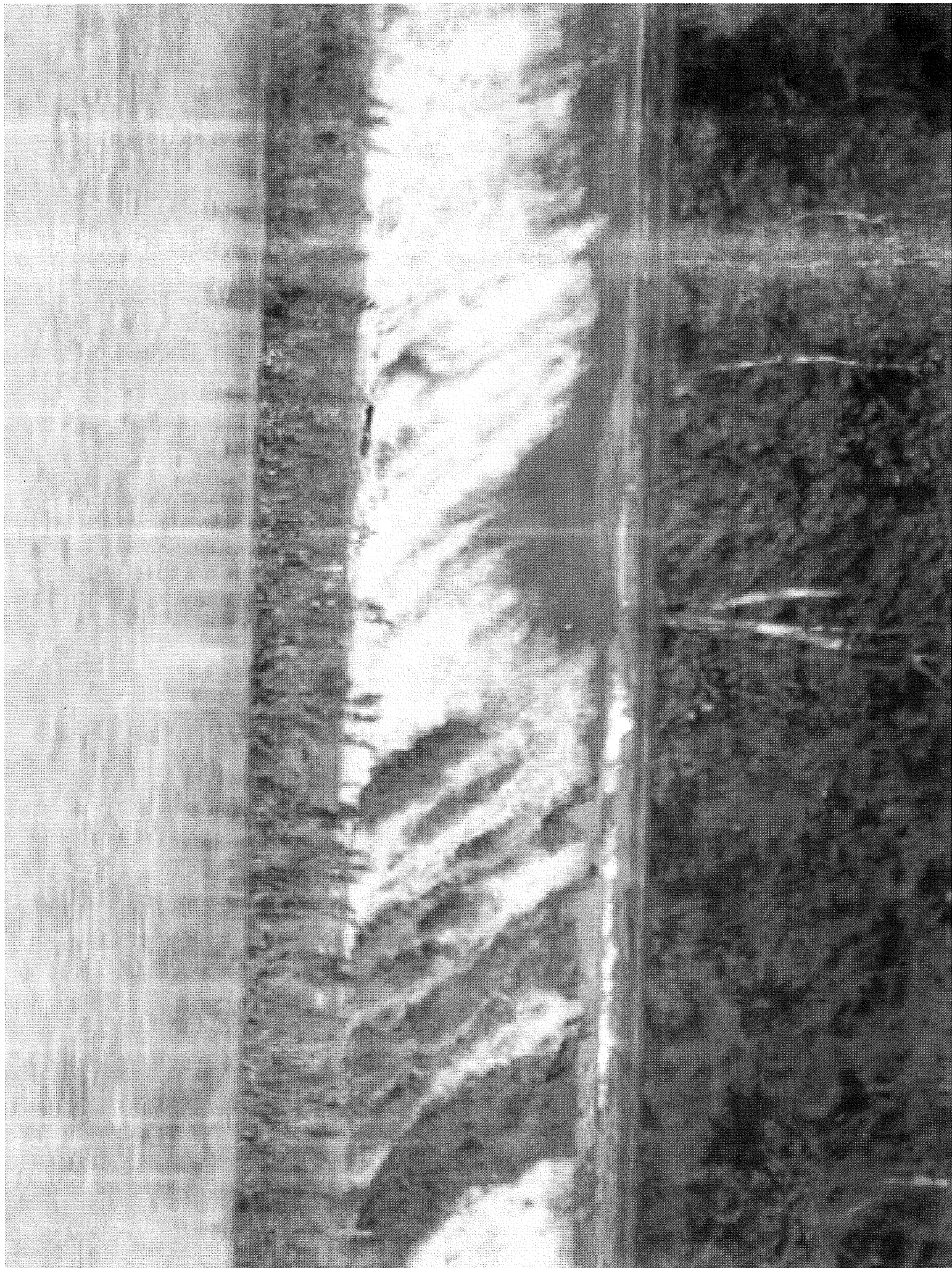
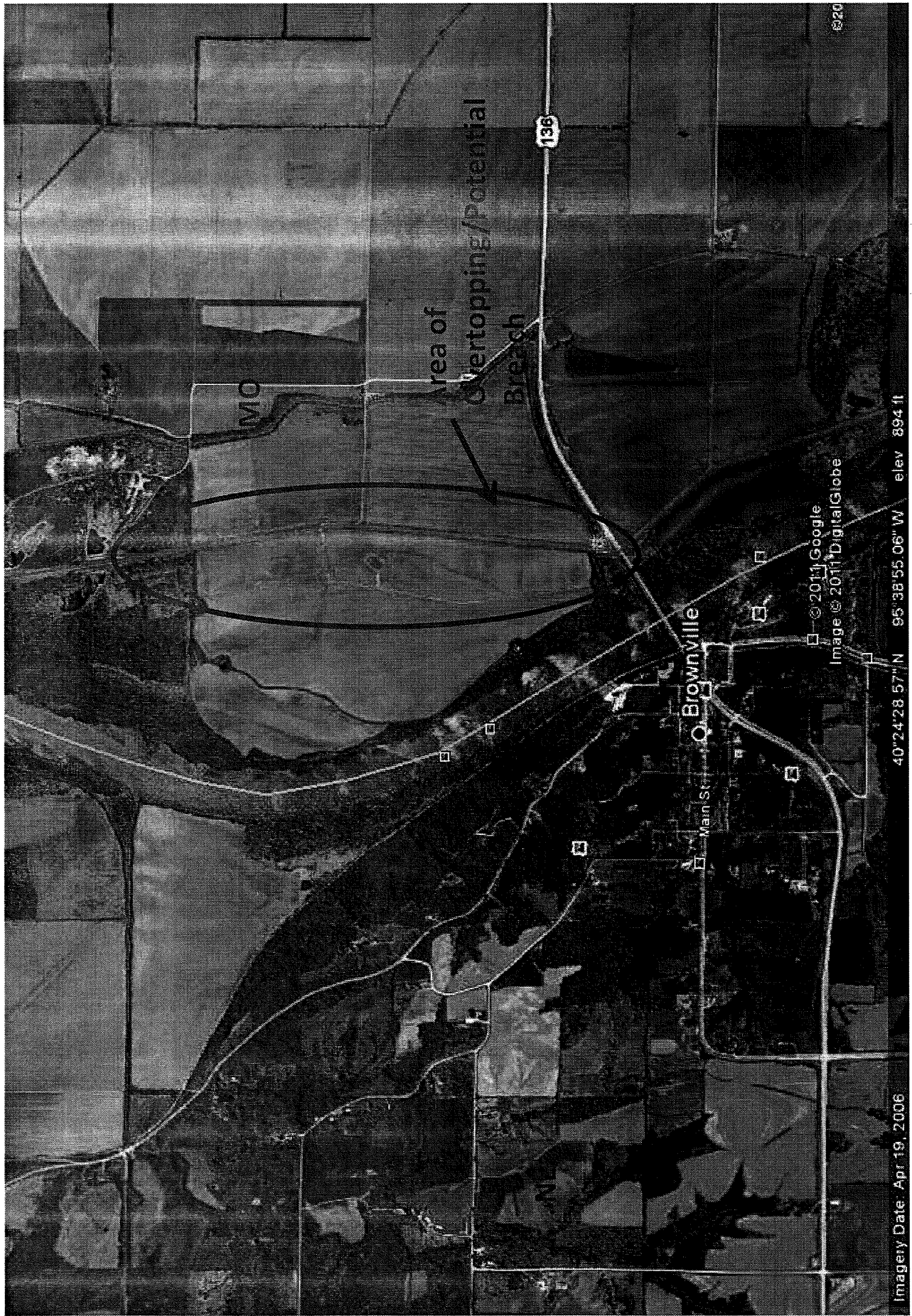


Figure 7. Rainfall on the Central Region of the United States for June 18, 2011.





Imagery Date: Apr 19, 2006

40°24'28.57"N 95°38'55.06"W elev 894 ft

© 2011 Google
Image © 2011 DigitalGlobe

138

Area of
Overtopping/Potential
Breach

Brownsville

Main St

MO

MO

[REDACTED] NWO

From: [REDACTED] NWK
Sent: Sunday, June 19, 2011 5:19 PM
To: Farhat, Jody S NWD02
Subject: RE: background info for BG McMahon vist (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

This is exactly what I needed. Thanks, Jody.

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Sunday, June 19, 2011 11:39 AM
To: [REDACTED] NWK
Subject: RE: background info for BG McMahon vist (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] each month we produce an updated forecast that covers a range of meteorological conditions: wet, dry and normal. Even our wet scenario on 1 May did not show the need to increase releases immediately or to record levels. The unprecedented rain in Montana is the reason releases are at record levels - this could not have been foreseen.

Jody

-----Original Message-----

From: [REDACTED] NWK
Sent: Saturday, June 18, 2011 12:09 PM
To: Farhat, Jody S NWD02
Subject: FW: background info for BG McMahon vist (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody,

I feel comfortable with her first question, based on the Master Manual TPs that have been previously developed, but I am not 100% clear on how to answer her rainfall question. Are you the correct person to help me answer that?

Thank you!

From: Roe, Melissa [<mailto:Melissa.Roe@mail.house.gov>]
Sent: Friday, June 17, 2011 3:37 PM
To: [REDACTED] NWK
Subject: background info

Hi [REDACTED]

I'm putting together some info for my boss' meeting BG McMahon next week.

Can you send me a paragraph or two explaining what the master manual lays out as guidelines for the releases that have affected our current situation? Also, I believe I read the Corps

was operating under assumptions of average rainfall. Is that correct and how much was that exceeded?

I want to make sure I provide a clear picture of how the master manual works when things go as expected and what kind of leeway it allows.

Thanks for your help!

Melissa Roe
Deputy Chief of Staff
Office of Congressman Sam Graves (MO-06)
113 Blue Jay Drive, Suite 100, Liberty, MO 64068
p. (816) 792-3976
f. (816) 792-0694
melissa.roe@mail.house.gov

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Sunday, June 19, 2011 4:58 PM
To: Farhat, Jody S NWD02; McMahon, John R BG NWD; Tipton, Robert A Col NWD; Anderson, G Witt NWD; Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK; Blechinger, Erik T NWO; [REDACTED] NWD; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWO; Farmer, Monique L NWO; [REDACTED] HQ@ NWO; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] M NWD02; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] SAW
Cc: [REDACTED] R NWD02; [REDACTED] NWD02; [REDACTED] Jr NWO; [REDACTED] D NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02
Subject: RE: WM Talking Points for 19 June stakeholder call (UNCLASSIFIED)
Attachments: 2011 Missouri River Flood Talking Points 19 Jun 2011.docx

Classification: UNCLASSIFIED
Caveats: NONE

fyi

Classification: UNCLASSIFIED
Caveats: NONE

2011 Missouri River Flood Talking Points
Missouri River Water Management
19 June 2011

We posted the updated reservoir forecast on the web this afternoon. There were no changes to the release schedule. We continue to watch the looming storm forecast over the Dakotas but for now the schedule stands.

Releases for the 6 dams are as follows:

- Fort Peck –Releases remain at 65,000 cfs today and will be reduced to 60,000 cfs on Monday as inflows continue to decline.
- Garrison – releases remain at 150,000 cfs
- Oahe and Big Bend –Releases from both projects were increased to 160,000 cfs today, and will be held at that level.
- Fort Randall – releases will remain at 143,000 cfs today and tomorrow, gradually stepping up to the peak release of approximately 148,000 cfs with the schedule dependent on the Gavins Point pool level.
- Gavins Point – releases remain at 150,000 cfs.

The forecast is based on best available information at this time; actual releases are based on conditions on the ground. We'll know more in a couple days when we see where the forecasted rains actually fall and how much runoff comes into each reservoir as a result. Peak releases are expected to continue well into August.

The mountain snowpack continues to decline.

Above Fort Peck: peaked at 141 percent of the normal peak accumulation, currently at 64%, down 55% from this year's peak

Fort Peck to Garrison: peaked at 136 percent of the normal peak accumulation, currently at 62%, down 54% from this year's peak

As of June 17

North Platte: peaked at 156 percent of the normal peak accumulation, currently at 54% (-65%)

South Platte: peaked at 150 percent of the normal peak accumulation, currently at 42% (-72%)

NWO

From: [REDACTED] NWD02
Sent: Sunday, June 19, 2011 4:32 PM
To: DLL-CENWD-PDR
Cc: Tom Gurss
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee R-548 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

FYSA.

[REDACTED], P.E.
Reservoir Regulation Team Lead
Missouri River Basin Water Management,
Northwestern Division, USACE
[REDACTED]
[REDACTED] (fax)

-----Original Message-----

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 4:29 PM
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; McMahon, John R BG NWD; CE-UOC HQ02; [REDACTED] NWK
Subject: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee R-548 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

All,

WHO: US Army Corps of Engineers, Omaha District
WHAT: Federal Levee Overtop - Missouri River PL 84-99 Federal Levee - R-548, Operated and Maintained by a local levee sponsor, built by USACE.
WHEN: 19 June 2011 at 1450
WHERE: Missouri River Levee Unit R-548, located south of Brownville, NE
WHY: Water levels at the Brownville gage increased approximately 2 feet in a 24 hour period from 0530 18 June to 0530 19 June. Water is currently going over approximately 30 foot stretch on southern portion of levee system. USACE reports that the sponsor has mobilized to the levee and will begin placing sandbags to cut off flow. Potential impacts include the Cooper Nuclear Plant. Grade at the Cooper Nuclear Plant levee is approximately at an elevation of 903 and the facility has sandbagged to an elevation of 907. Water is approximately at an elevation of 900.5.

Population totals: 17
Total buildings: 19
Total buildings - Residential: 19
Area protected: 4268 Acres

[REDACTED]
Natural Disaster Program Manager, Readiness Branch U.S. Army Corps of Engineers, Omaha District
1616 Capitol Ave, Ste 9000 (Attn: CENWO-OD-E) Omaha, NE 68102-9000

Phone: () 885-2446
Cell: () 492-1234
Fax: ()
@usace.army.mil

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: [REDACTED] NWD02
Sent: Sunday, June 19, 2011 4:31 PM
To: Farhat, Jody S NWD02; [REDACTED] NWD02
Subject: Editorial from Bismarck Tribune (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I like the bicycle analogy.

=====
Bismarck Tribune - Online, The
Bismarck, ND
06/19/2011

Nature, not the Corps of Engineers, is driving the flood

So the finger-pointing at the U.S. Army Corps of Engineers begins.

I'm not a particular fan of the Corps of Engineers, but I think the growing tide of blame is largely misguided. The simple fact is that this is a gargantuan (I almost wrote titanic) water year in the Missouri-Mississippi basin, from Dillon, Mont., to Memphis and New Orleans.

The Corps of Engineers is desperately trying to maintain control of one of the biggest water episodes on the fourth longest river in the world, the 10th most powerful, a clogged and waterlogged drainage basin that collects the runoff of all or part of 31 states and two Canadian provinces. The Missouri-Mississippi basin embraces fully 41 percent of the continental United States. It's on the rampage this year. The corps is doing everything it can to minimize the damage from Helena and Bozeman to New Orleans, a distance of 3,709 miles. It's a war on many fronts, and there is going to be some collateral damage, including here in North Dakota.

The corps is not the culprit. The flood of 2011 is nature's doing (an act of God, as the insurance industry puts it), and at this point the corps is just trying to remain part of the equation to lessen the catastrophe. It's like riding a bicycle down a very steep hill and pedaling with all your might just to maintain the illusion that you are in control, or trying to ski along the crest of an avalanche as it cascades down a mountainside. Blame the corps if you want, but if there were no dams on the Missouri River, Kirkwood Mall would be under water and people would be wading through the streets of Kansas City and St. Louis.

Damning the corps is easy, of course, and also kind of satisfying. For one thing, the Corps is handy, it's a faceless monolithic abstraction, and best of all it's the federal government, the universal whipping boy of the disgruntled. Besides, we North Dakotans have a longstanding legitimate quarrel with the corps, which manages the Missouri River more for the benefit of the dying barge industry below Sioux City than for the people of the Upper Basin.

Still, it is worth remembering three things. One: the corps itself is tyrannized by the outdated Flood Control Act of 1944, which gives the agency very mixed (and mutually exclusive) directives on how to manage the Missouri River. Two: Now, in the midst of this catastrophe, the corps has to try to manage the entire Missouri-Mississippi system on the utilitarian principle of the greatest good for the greatest number, or (more precisely) the least damage to the largest population and commercial centers. Hard as it is for us to accept, given the magnitude of the system-wide flood, Bismarck and Mandan are among the

corps' lesser concerns. Three: blame whom you will, but at this point there isn't a darn thing the U.S. Army Corps of Engineers can do to help Bismarck and Mandan.

There is only one question left for the Army now. Can the corps manage the system to release as much water as possible in the next few weeks (without devastating Bismarck-Mandan, Fort Yates, Pierre, Yankton, Sioux City, Omaha, St. Joseph, Kansas City, and St. Louis) so that it can open up enough storage capacity on the six mainstem dams in time to hold back and slow down the Montana snowmelt? It's a race against time.

Of course the corps could have released much more water from the six dams over the winter to brace the Upper Basin for "the perfect storm" of 200 percent snowpack and extensive late spring rains in Montana, but the flood along the middle and lower Mississippi River earlier this spring, which threatened Memphis and New Orleans and flooded hundreds of thousands of acres of land, forced the corps to hold back as much water as it possibly could in the Upper Basin.

It was a gamble and a political choice. The gamble was that the 2011 Upper Basin conditions would not quite overwhelm the system. That gamble was lost in Montana rains that could not have been predicted. The choice was to protect the large downstream population centers to the possible, but not certain, detriment of the less densely populated upstream communities. If the dikes in Bismarck-Mandan hold for the next two months, that decision will be vindicated, however frustrating it will seem to those who lose their homes or spend the summer as high ground refugees.

The almost daily arrival of moderate to heavy rains is making me nervous. Not only because my garden is now a moist mass of weeds and the streets of Bismarck are apparently dissolving pothole by pothole, but all that water has to go somewhere. I'm no hydrologist but in my simplistic thinking it goes something like this: The six Pick-Sloan dams are all chock full. The land is saturated. Heavy rains in eastern Montana are what caused the flood in the first place. These new rains – including last Sunday night's magnificent thunderstorm – are topping up an already brimming reservoir storage system. And the entire Montana snowmelt is still to come. We have been assured by experts that the heavy rains are not making much of a difference, but twice in the last week the street in front of my house has turned into a kind of paved creek. These rains have blanketed much of western and central North Dakota. Lake Oahe is full and backing up. Lake Sakakawea is full and spilling. It seems to me that our problems are being compounded – perhaps disastrously – by immoderate June rains.

Classification: UNCLASSIFIED

Caveats: NONE

NWO

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 4:29 PM
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; McMahon, John R BG NWD; CE-UOC HQ02; [REDACTED]
NWK
Subject: ***URGENT***CCIR - Levee Overtopping - Missouri River Levee R-548 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

All,

WHO: US Army Corps of Engineers, Omaha District
WHAT: Federal Levee Overtop - Missouri River PL 84-99 Federal Levee - R-548, Operated and Maintained by a local levee sponsor, built by USACE.
WHEN: 19 June 2011 at 1450
WHERE: Missouri River Levee Unit R-548, located south of Brownville, NE
WHY: Water levels at the Brownville gage increased approximately 2 feet in a 24 hour period from 0530 18 June to 0530 19 June. Water is currently going over approximately 30 foot stretch on southern portion of levee system. USACE reports that the sponsor has mobilized to the levee and will begin placing sandbags to cut off flow. Potential impacts include the Cooper Nuclear Plant. Grade at the Cooper Nuclear Plant levee is approximately at an elevation of 903 and the facility has sandbagged to an elevation of 907. Water is approximately at an elevation of 900.5.

Population totals: 17
Total buildings: 19
Total buildings - Residential: 19
Area protected: 4268 Acres

[REDACTED]
Natural Disaster Program Manager, Readiness Branch U.S. Army Corps of Engineers, Omaha District
1616 Capitol Ave, Ste 9000 (Attn: CENWO-OD-E) Omaha, NE 68102-9000
Phone: [REDACTED]
Cell: [REDACTED]
Fax: [REDACTED]
[REDACTED]@usace.army.mil

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: Lester Cruse [Lester.Cruse@ergon.com]
Sent: Sunday, June 19, 2011 4:10 PM
To: Bill Beacom; Bill Jackson; Carl Clark; Chad; Dave Dewey; David Smith; Doug Clark; Doug Halbert; Henleben, Ed MVS External Stakeholder; Garland; Jason Branstetter; John Drew; Katie Safley; Kevin Holcer; Kip; Larry Reddick; Cruse, Lester External Stakeholder; [REDACTED]; [REDACTED] LRP; Mike Olson; Wells, Mike MVS External Stakeholder; Pam Lawhon; Paul Dolak; [REDACTED]; Randy Canfield; Ray Bohlken; Roger Harris; Steve Engemann; [REDACTED]; [REDACTED] WK; BMCM [REDACTED]; [REDACTED] USCG; CDR [REDACTED]; [REDACTED]; David Martyn; LCDR [REDACTED]; LCDR [REDACTED]; Scott Adler; [REDACTED] NWD; [REDACTED] MVS; [REDACTED] NWK; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] NWK; [REDACTED] NWD02; [REDACTED] MVD; [REDACTED] NWD02; [REDACTED] HQ02; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] M NWO; [REDACTED] MVS; [REDACTED] NWD02; [REDACTED] NWO; Thomas, Kimberly S NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Missouri River WAP-HW Trigger Table for 06-19-2011/ No Call Today
Attachments: MO RIV WAP HW Trigger Table June 19, 2011.xls

We will not have a call today, but will resume the call at 1630 on the 20th I will send the number out in the morning. Happy Fathers Day, Lester Cruse

Captain Lester Cruse III
Port Captain
Office: (800) 696-5921 24-Hour Number
Desk: (601) 802-8602
Cell: (601) 831-1406
Fax: (601) 638-8475

lester.cruse@ergon.com

lcruseiii@gmail.com

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Tough times never last, but tough people do with Gods Help!

MISSOURI RIVER WAP ANNEX HIGH WATER STAGE

TRIGGER TABLE

June 19, 2011

RISING GAGE READING

Reach	Gage Location	No Action	Trigger Stage Reading (ft)*		Extreme High Water
			Normal Operations	High Water	
SIoux CITY REACH	Sioux City	< 28	28 - 29	29 - 30	> 30
RM 734.8 - 630	Omaha	< 21	21 - 26	26 - 29	> 29
OMAHA REACH	Omaha	< 21	21 - 26	26 - 29	> 29
RM 630 - 600	Rulo	< 15	15 - 17	17 - 20	> 20
ST JOSEPH REACH	Rulo	< 15	15 - 17	17 - 20	> 20
RM 500 - 400	St. Joseph	< 15	15 - 17	17 - 20	> 20
Atc. Bridge out at 26'	Atchison**	< 21	21 - 22	22 - 26	> 26
	Kansas City	< 30	30 - 32	32 - 35	> 35
KANSAS CITY REACH	Kansas City	< 30	30 - 32	32 - 35	> 35
RM 400 - 300	Waverly	< 20	20 - 22	22 - 25	> 25
BRUNSWICK REACH	Waverly	< 20	20 - 22	22 - 25	> 25
RM 300 - 200	Miami	< 18	18 - 21	21 - 25	> 25
	Glasgow	< 22	22 - 25	25 - 27	> 27
	Boonville	< 20	20 - 21	21 - 25	> 25
JEFFERSON REACH	Boonville	< 20	20 - 21	21 - 25	> 25
RM 200 - 100	Jefferson City	< 22	22 - 23	23 - 26	> 26
	Hermann	< 20	20 - 21	21 - 25	> 25
HERMANN REACH	Hermann	< 20	20 - 21	21 - 25	> 25
RM 100 - 0	Washington	< 19	19 - 20	20 - 26	> 26
	St. Charles	< 22	22 - 25	25 - 27	> 27

* NOTE: For Falling Gage Readings Review the Table Columns from Right to Left

****NOTE:** Bridge Tender for Union Pacific RR Bridge at Atchison, KS may close the swingspan section when Atchison river gage reaches 26 ft with a rising river predicted.

Corps of Engineers Two Week Forecast - Some predicted rainfall has been added. The forecast includes water in the tributaries at the gages routed to the Missouri River.

	No Data Posted Today	Gage Stage Today	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast	Gage Stage Forecast
		Gage Location																	
		Omaha (RM 675.9)	33.2	33.3	20-Jun-11	22-Jun-11	23-Jun-11	24-Jun-11	25-Jun-11	26-Jun-11	27-Jun-11	28-Jun-11	29-Jun-11	30-Jun-11	1-Jul-11	2-Jul-11	3-Jul-11		
		Rulo (RM 498.1)	25.2	25.1	25.3	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4		
		Kansas City (RM 386.1)	26.6	26.8	26.6	27.7	28.7	29.1	29	29	28.9	28.8	28.7	28.7	28.6	28.6	28.6		
		Waverly (RM 393.4)	24.9	25.2	25.2	25.3	26.1	26.7	26.8	26.7	26.6	26.6	26.5	26.5	26.4	26.4	26.4		
		Bonville (RM 197.1)	21.7	21.9	22.1	22.3	22.4	23.2	23.6	23.6	23.6	23.5	23.5	23.4	23.4	23.4	23.4		
		Bermann (RM 97.9)	21.5	21.2	21.1	21.6	21.6	22.1	22.7	22.7	22.5	22.5	22.4	22.4	22.2	22.2	22.2		

NWO

From: MRJIC
Sent: Sunday, June 19, 2011 3:56 PM
Subject: Missouri River Joint Information Center Call 5 p.m. (CDT) ***Original Number Still Being Used***

ORIGINAL CALL NUMBER STILL BEING USED

Reminder: The daily call will occur at 1700hrs/CT. Call in information is as follows:

Access Code: [REDACTED]
Security Code: [REDACTED]

This call is intended for Congressional Delegation, Tribes, State Government, Local Government, and Press. Please do not distribute the number to the general public, the JIC is set up with email and call in accessibility to answer questions for the general public.

General format includes updates from the Hydrometeorological Center (HPC), Iowa Department of Transportation, Missouri Department of Transportation, Nebraska Department of Transportation, the Missouri River Basin Water Management Division, USACE Omaha District Emergency Operations Center, USACE Kansas City District Emergency Operations, followed by a Questions and Answer opportunity.

To listen to the previous recordings, please visit our website.
<http://www.nwo.usace.army.mil/html/op-e/flood2011/pressconf_arch.html>

For bios of USACE staff on 5 p.m. call, please visit our website.
<[http://www.nwo.usace.army.mil/html/op-e/flood2011/Flood Press Packet Jun 2011 QR.pdf](http://www.nwo.usace.army.mil/html/op-e/flood2011/Flood_Press_Packet_Jun_2011_QR.pdf)>

Thank you.

MRJIC

NWO

From: Farmer, Monique L NWO
Sent: Sunday, June 19, 2011 1:01 PM
To: Farhat, Jody S NWD02
Subject: Correction to NPR Article (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody:

This line from the article in NPR concerns me:

" Saturday morning, for the first time in history, the Corps opened all the emergency outlets on six dams beyond their maximum recommended flow levels to keep the dams from collapsing."
<http://www.npr.org/2011/06/18/137266815/who-gets-flooded-a-by-the-book-decision>

Which dams are currently using the spillway to evacuate floodwaters? Not sure what they mean by recommended flows as the dams are designed to pass much more water. I will get with you before I contact them.

V r,

Monique Farmer
Media Relations Team Lead/Missouri River Joint Information Center U.S. Army Corps of Engineers Omaha District
(402) 996-3877
(402) 779-1460

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Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: Cedar County Emergency Management - Kevin Garvin [cedarem@hartel.net]
Sent: Sunday, June 19, 2011 12:36 PM
To: Farhat, Jody S NWD02
Subject: RE: Gavin's Point Dam (UNCLASSIFIED)

Thanks for the info.

I understand you are not anticipating any increased releases. I'm trying to plan for the unanticipated. We never in our wildest dreams ever anticipated a 150,000 cfs flow.

I'll await John's reply.

Kevin

-----Original Message-----

From: Farhat, Jody S NWD02 [<mailto:Jody.S.Farhat@usace.army.mil>]
Sent: Sunday, June 19, 2011 11:42 AM
To: cedarem@hartel.net
Cc: [REDACTED] NWO
Subject: RE: Gavin's Point Dam (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Kevin - At the present time we do not anticipate increasing releases beyond 150,000 cfs. I have cc'd John Remus, Chief of Hydrologic Engineering for the Omaha District, and believe he could tell you what the inundation mapping is based on and potential impacts of higher flows either from the tributaries or reservoir releases.

Jody

-----Original Message-----

From: Kevin Garvin [<mailto:cedarem@hartel.net>]
Sent: Friday, June 17, 2011 6:08 PM
To: Farhat, Jody S NWD02
Subject: Gavin's Point Dam

Jody,

In listening to the call today I understand that there is the probability that releases from Gavin's may need to increase down the road if mother nature keeps up the moisture. We have kind of figured from day one that may become necessary.

I know this is like hitting a moving target, but for our Emergency Planning purposes what ranges might be possible? What ranges do we need to plan for?

Also, will we be able to get new inundation information that covers the range far enough in advance so that we can get word out to the affected citizens before the media does?

The USACE teams working this event have a tough job that few understand.
Keep up the good work.

Thanks

Kevin Garvin

Director of Emergency Management

Cedar County Nebraska

402-254-6862 Office

402-640-4650 Cell

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: McMahon, John R BG NWD
Sent: Sunday, June 19, 2011 12:33 PM
To: Farhat, Jody S NWD02
Cc: Anderson, G Witt NWD; Austin-Smith, Christina A NWD
Subject: RE: 1898 runoff slide (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Thank you!

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Saturday, June 18, 2011 5:46 PM
To: McMahon, John R BG NWD
Cc: [REDACTED] NWD; [REDACTED] NWD
Subject: 1898 runoff slide (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Sir,

Attached is the slide depicting annual runoff in the Missouri River basin since 1898.

I've added this slide to the flood presentation on the web and will use it in the editorial board meeting tomorrow.

Let me know if I can be of further assistance.

VR,
Jody

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

NWO

From: MRJIC
Sent: Sunday, June 19, 2011 12:33 PM
To: Farhat, Jody S NWD02
Subject: RE: Ft. Peck Reservoir (UNCLASSIFIED)

Thanks Jody ;)

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Sunday, June 19, 2011 12:26 PM
To: MRJIC
Subject: RE: Ft. Peck Reservoir (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

The storage capacity of Fort Peck was incorrectly reported below. The storage capacity of Fort Peck dam measured at the top of the spillway gates when the gates are in the closed position is 18.5 MAF. As the spillway gates are raised, the reservoir gains additional storage capacity. The current volume of water stored in Fort Peck today with the spillway gates raised is 19.0 MAF.

Jody

-----Original Message-----

From: MRJIC
Sent: Sunday, June 19, 2011 11:58 AM
To: Farhat, Jody S NWD02
Subject: RE: Ft. Peck Reservoir (UNCLASSIFIED)

Jody,

Could you please help me put together a response for the question addressed below.

Thanks

-----Original Message-----

From: douglas baty [mailto:douglas.baty@montana.gov]
Sent: Saturday, June 18, 2011 7:44 AM
To: MRJIC
Subject: Re: Ft. Peck Reservoir (UNCLASSIFIED)

Good morning. I'm quite interested in how the Corps is managing to handle all the water flowing out of Montana now. Today's Missoulian states that the elevation at Fort Peck is 2 feet above full pool, yet your note says there is still 2 MAF of storage available(as of June 12). The Corps site I found states the elevation, but does not state inflow/outflow, nor does it state what full pool is. Could you clarify this for me? Thanks. Douglas Baty-Dixon Montana.

On Jun 12, 2011, at 9:38 AM, MRJIC wrote:

> **Classification:** UNCLASSIFIED
> **Caveats:** NONE
>
>

>
> -----Original Message-----
> From: MRJIC
> Sent: Sunday, June 12, 2011 10:36 AM
> To: '[REDACTED]'
> Subject: Ft. Peck Reservoir (UNCLASSIFIED)
>
> Classification: UNCLASSIFIED
> Caveats: NONE
>
> Mr. Baty: Thank you for your question. Ft Peck has a total storage
> capacity slightly greater than 21 million acre feet (MAF). Currently,
> Ft. Peck storage is at just less than 19 MAF.

> [REDACTED]
>
>
> [REDACTED]
> Reservoir Regulation Team Lead
> Missouri River Basin Water Management, Northwestern Division, USACE
> 402.996.3870
> 402.996.3898 (fax)

> -----Original Message-----
> From: douglas baty [mailto:[REDACTED]]
> Sent: Saturday, June 11, 2011 7:48 AM
> To: Management, Missouri Water NWD02
> Subject: Fort Peck Reservoir
>

> Hello: I am attempting to learn how much storage capacity is still
> available in the Fort Peck Reservoir. Could you please direct me to
> where this information can be found? Thanks, Douglas Baty

> Classification: UNCLASSIFIED
> Caveats: NONE
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> Classification: UNCLASSIFIED
> Caveats: NONE
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>
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> Classification: UNCLASSIFIED
> Caveats: NONE
>
>
>

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Sunday, June 19, 2011 12:32 PM
To: [REDACTED] NWD02; [REDACTED] NWO; CENWO-EOC NWO; Williamson, Eileen L NWO; [REDACTED] MVR; Farhat, Jody S NWD02; [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] RH; [REDACTED] LRH; [REDACTED] MVM; [REDACTED] LRH
Cc: [REDACTED] NWO; [REDACTED] NWD02; Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED] NWD-OMAHA; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] RMC; [REDACTED] NWD02; [REDACTED] NWD; [REDACTED] MVD; DLL-CELRD-RBW; Patriciaawhitt@msn.com; [REDACTED] HQ02; [REDACTED] HQ; [REDACTED] SAW; [REDACTED] MVD
Subject: RE: Missouri River Basin Water Management Division Situation Report of 6-19-11 (UNCLASSIFIED)
Attachments: Missouri River Basin Water Management Situation Report 6-19-11.docx

Classification: UNCLASSIFIED
Caveats: NONE

Any questions call me.

[REDACTED]
Northwestern Division
[REDACTED] Ofc
[REDACTED] Blkbry

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Basin Water Management Situation Report – 6-19-11

Reservoir Conditions

The upper three reservoirs of the Missouri River Mainstem Reservoir System provide the bulk of the storage of water. All three are in their exclusive flood control zones, with Fort Peck passing its spillway crest (continuing up on raised spillway gates) and the other two being near their spillway crests. Table 1 summarizes the situation as of 0000 hours this morning. The relatively high inflows that have been coming into Fort Peck and Garrison Reservoirs will likely continue, although inflows into Fort Peck declined today. More details on the reservoirs can be found on the daily bulletin prepared by the Missouri River Basin Water Management Division at: <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULLOMR1>.

Table 1. Key Reservoir Data (through 0000 hrs 6/19/11)

Reservoir	Inflow kcfs	Outflow kcfs	Top of Spillway Gates feet msl	Current Level feet msl	24-hr Change feet
Fort Peck	50.0	65.5	2250	2252.1	-0.1
Garrison	169.0	150.0	1854	1853.9	0.1
Oahe	156.0	153.6	1620	1618.5	-0.2
Big Bend	150.0	153.0	1423	1419.5	-0.2
Fort Randall	158.0	143.6	1375	1364.5	0.2
Gavins Point	149.0	150.1	1210	1207.7	-0.1

Based on the current level data for the upper three reservoirs, the amount of remaining storage has been changing in its distribution among the upper three, larger reservoirs. Fort Peck remains in surcharge, though outflows did exceed inflows today. With the increased releases from Fort Peck and the increase in tributary inflows, Garrison Reservoir is rising and will be going into surcharge over the next week and a half. Oahe will not be surcharged because there are no plans at this time to use its spillway, which would result in the raised gates and the potential to surcharge that reservoir. The lower three reservoirs have much less capability to store the inflows that are coming into the Missouri River Mainstem Reservoir System, with Fort Randall Reservoir having the greater amount. As of today, the stored water has not yet entered the exclusive flood control zones of the three smaller reservoirs; therefore, 100 percent of their exclusive flood control storage remains available. Table 2 summarizes the storage volumes of all six System reservoirs, with the last column listing the amount of exclusive flood control storage that remains as of today. Spillways are now being used at five of the six reservoirs, with no plans to use the Oahe spillway at this time.

Table 2. Reservoir Storage Data (through 0000 hrs 6/19/11)

Reservoir	Current	Total	Remaining	Exclusive	% Excl Left
	kAF	kAF	kAF	kAF	
Fort Peck	18,985	18,463	-522	971	-54
Garrison	23,766	23,821	55	1,489	4
Oahe	22,624	23,137	513	1,102	47
Big Bend	1,615	1,798	183	60	100
Fort Randall	4,388	5,418	1,030	985	100
Gavins Point	385	450	65	57	100

Releases from all six reservoirs are currently exceeding records prior to 2011. Table 3 provides release data for all six reservoirs to provide some perspective on the changes that will be happening over the next 2 weeks. Beginning June 17, releases from Oahe and Big Bend reservoirs were increased to 160,000 cfs to gain storage space for future rainfall events affecting Oahe and Garrison reservoirs levels. Releases from Fort Peck will be reduced to 60,000 cfs on Monday as inflows continue to decline. The other reservoir releases are currently being maintained at their anticipated maximum releases. Full listing of the reservoir data through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>.

Table 3. Reservoir Release Comparisons (through 0000 hours 6/19/11)

Reservoir	Yesterday	Forecast	7 days out	14 days out	Pre-2011
	kcfs	Today	26 June	03 July	Record
	kcfs	kcfs	kcfs	kcfs	kcfs
Fort Peck	65.5	65	60	60	35
Garrison	150.0	150	150	150	65
Oahe	153.6	160	160	160	59
Big Bend	153.0	160	160	160	74
Fort Randall	143.6	143	148	148	67
Gavins Point	150.1	150	150	150	70

River Conditions

Levees have been constructed by the Corps at numerous locations, resulting primarily from the releases from Garrison, Oahe, and Gavins Point Dams. Many communities along the lower Missouri River are currently experiencing Missouri River flows that are above flood stage by several feet. The flood stages currently being experienced will be exceeded as Missouri River Mainstem Reservoir System releases move through their downstream reaches and inflows from the downstream reaches and localized precipitation joins these high releases. Table 4 summarizes the current conditions as of 0600 hours this morning and the Corps' current forecast for crest stages.

Table 4. Missouri River Stage Data for 6/19/11 at 0600 CDT

Location	Flood Stage	Current Stage	Forecast Crest Stage	Date of Crest Stage
Bismarck, ND	16	18.8	20.6	mid-Jun
Pierre, SD	13	19.1	18.7	mid-Jun
Sioux City, IA	30	33.5	35-37	mid-Jun thru July
Decatur, NE	35	38.3	40-42	mid-Jun thru July
Omaha, NE	29	33.2	34-36	mid-Jun thru July
Nebraska City, NE	18	26.2	27-28+	mid-Jun thru July
St. Joseph, MO	17	23.9	27-32	mid-Jun thru July
Kansas City, MO	32	26.6	30-39	mid-Jun thru July
Waverly, MO	20	24.9	27-31	mid-Jun thru July
Boonville, MO	21	21.7	27-33	mid-Jun thru July
Hermann, MO	21	21.5	27-33	mid-Jun thru July

Figures 1 and 2 present the plots of the 0600 hour stages at Bismarck and Pierre, respectively. The stages at Bismarck have not reached the initial estimated levels as the Garrison Reservoir releases have increased. The reduction is likely due to the scouring of the channel as the flows are well above the levels in recent years. The stages at Pierre have closely followed the estimated levels, being just slightly over the initial estimate for crest elevation, as the upstream Oahe Reservoir releases have reached the 150-kcfs level. Increasing releases from Oahe Reservoir to 160,000 cfs has slightly increased stages at Pierre. However, the stages at both cities are still about 3 feet below the constructed levee crests.

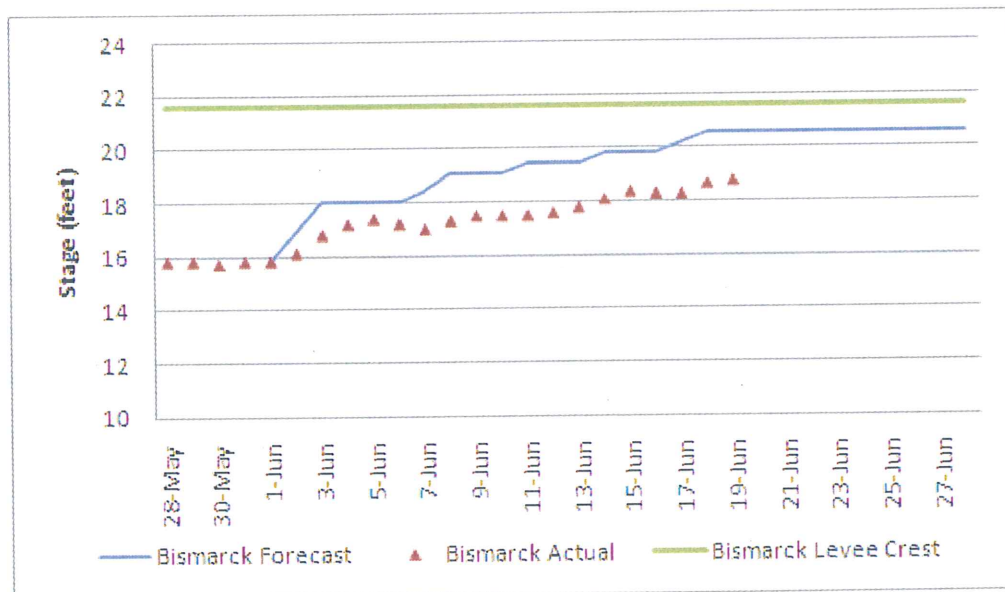


Figure 1. Missouri River stages at Bismarck, North Dakota.

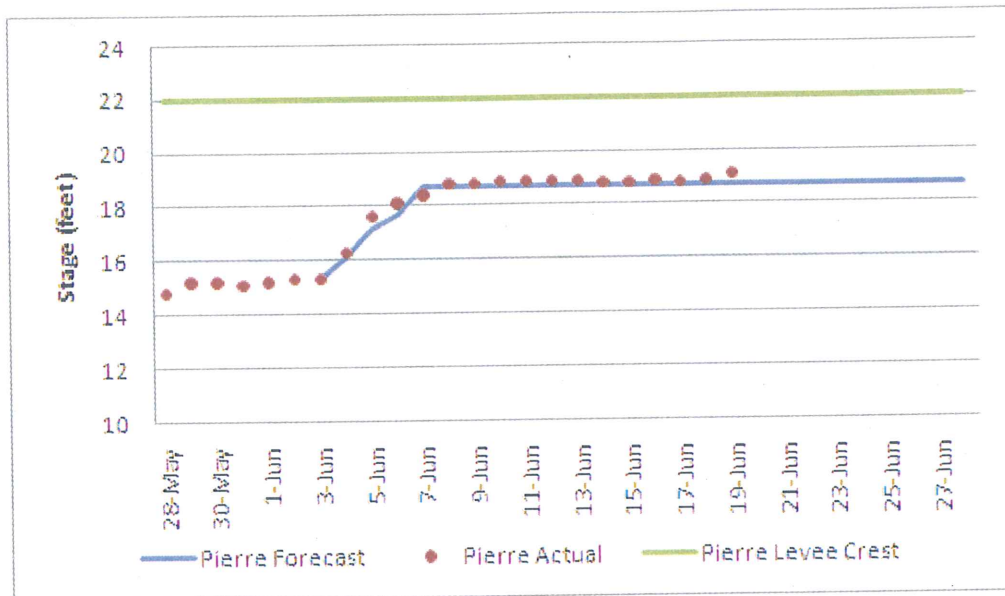


Figure 2. Missouri River stages at Pierre, South Dakota.

Information on Current Mountain Snowpack and Forecasted Rainfall

Releases from the System reservoirs are based on snowpack and rainfall forecasts in the Missouri River basin. An updated snowfall forecast has not yet been prepared today; however, the Hydrometeorological Prediction Center (HPC) of NOAA prepares a rainfall forecast daily for up to the next 5 days, with an accumulated figure also presented on its website. The next 5 days do not look good as widespread moderate to heavy rain is forecasted for much of the Missouri River Basin. Inflows from the heavier forecasted areas would drain into all reservoirs in the System except Fort Peck. Figure 3 is the accumulated 5-day rainfall forecast for today by HPC, and Figure 4 is the June 17 mountain snowpack update by the Corps.

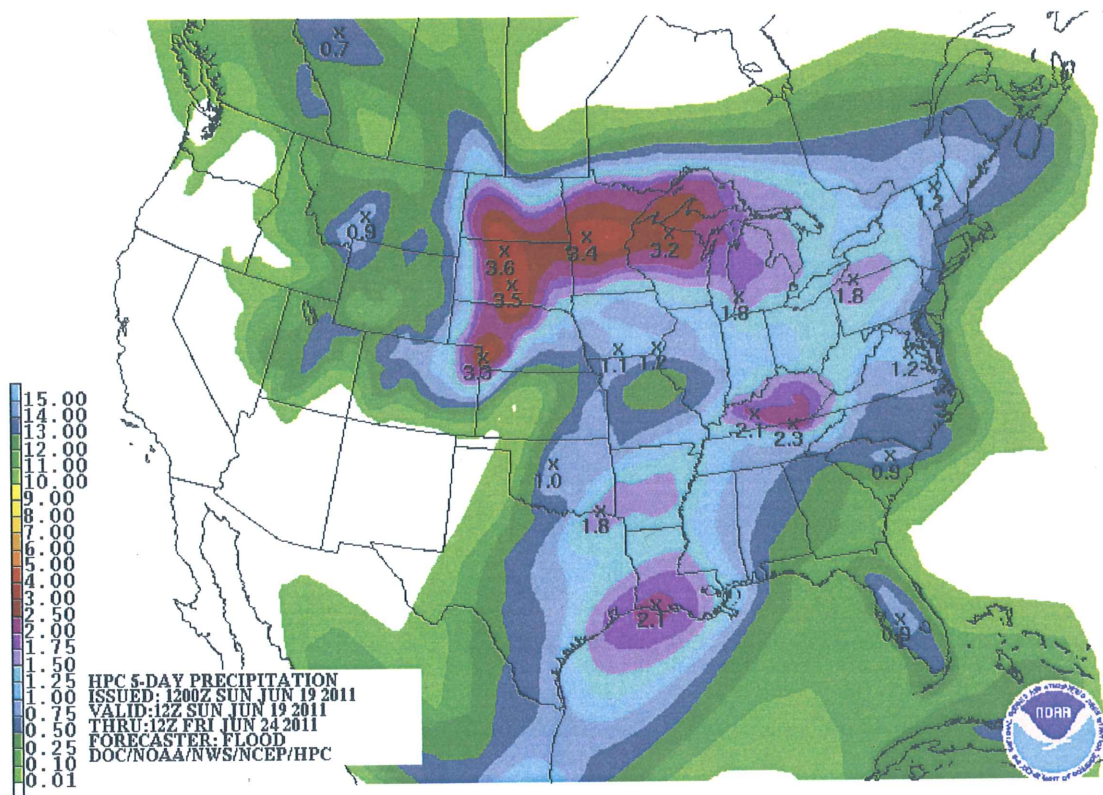
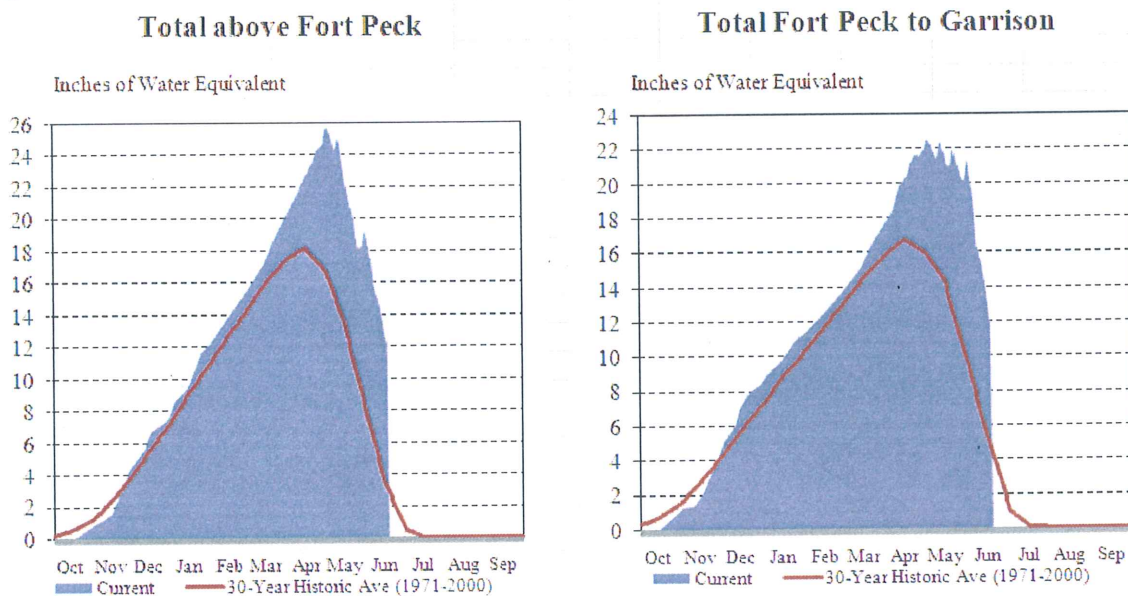


Figure 3. 5-day total QPF ending 0700 Thursday, June 23, 2011.



The Missouri River Basin mountain snowpack normally peaks near April 15. The mountain snowpack in both the "Total above Fort Peck" and the "Total Fort Peck to Garrison" reaches appears to have peaked on May 2 at 141 percent and 136 percent of the normal April 15 peak, respectively. The current mountain snowpack, as of June 17, is 67 percent and 71 percent of the normal April 15 peak in the "Total above Fort Peck" and the "Total Fort Peck to Garrison" reaches, respectively.

June 17, 2011

Provisional data. Subject to revision.

Figure 4. Missouri River basin mountain snowpack water content summary, 2010-2011 – June 17, 2011.

Current Actions and Notable Information

Levee construction been completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System reservoirs. Floodplain evacuations have been ongoing for many lower-lying areas along the lower Missouri River. The most recent of these levees, the Hamburg levee, has also been completed. The failure of levee L-575 occurred at river stages just under the maximum stage in 2010.

Figure 5 is a plot showing the Nebraska City (just across the river from the upper reaches of L-575) 0600 stages for 2010 and 2011 (through today), both years with high river stages. This figure shows that the river level is now above the 2010 maximum.

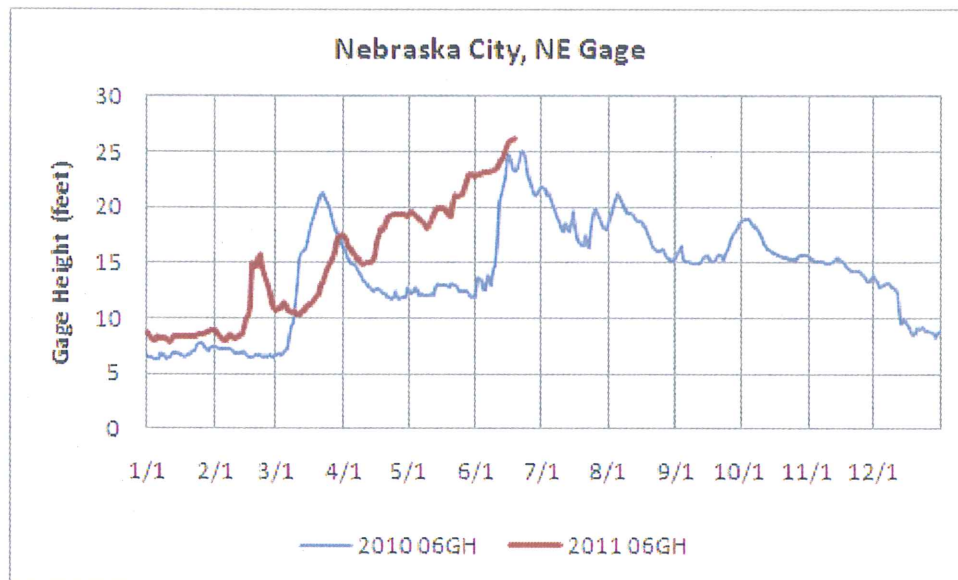


Figure 5. River stages at Nebraska City, Nebraska for 2010 and 2011.

A second levee failed at Big Lake, Missouri Monday, June 13. This location is across the river from Rulo, Nebraska. The gage plot for this location is shown below as Figure 6. Another factor, such as duration of water against the levee or back-to-back years with water against the levee appears to be playing a role in the failure of this levee as well as the levee near Hamburg.

Today, L-550 located north of Highway 136 in Atchison County, Missouri overtopped. Water levels at the Brownsville gauge increased approximately two feet in a 24-hour period from 5:30 a.m. 18 June to 5:30 a.m. 19 June.

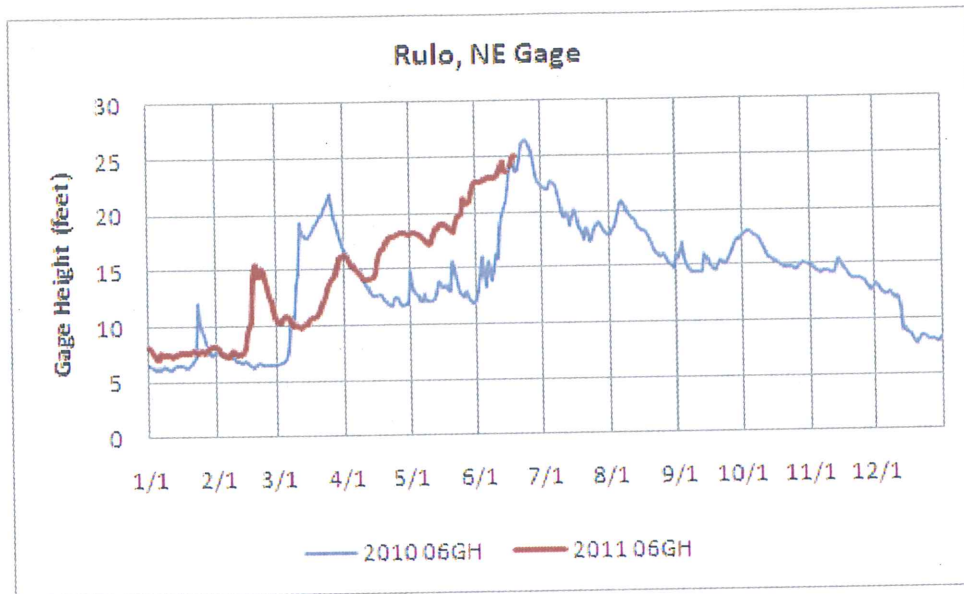


Figure 6. River stages at Rulo, Nebraska for 2010 and 2011.

Moderate rains fell over Eastern Montana, central North Dakota and most of the lower basin between 0700 hours yesterday and today. Figure 7 shows the amount of rain that fell in the basin and surrounding area of the Central Region of the United States.

NWS Central Region: Current 1-Day Observed Precipitation
Valid at 6/19/2011 1200 UTC- Created 6/19/11 15:41 UTC

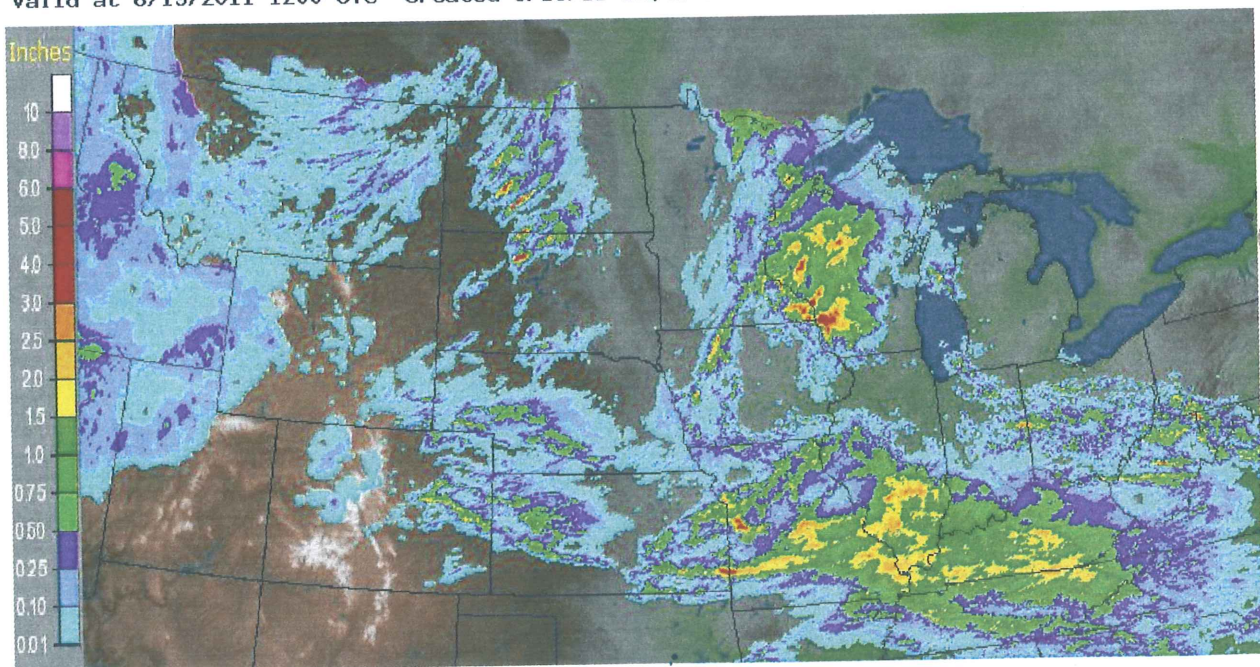


Figure 7. Rainfall on the Central Region of the United States for June 18, 2011.

NWO

From: Williamson, Eileen L NWO
Sent: Sunday, June 19, 2011 12:29 PM
To: DLL-CENWO-ALL Employees; DLL-CENWD Zorinsky-Floor 3
Subject: FW: Riverwatch June 19, 2011 #2011MoRivFlood (UNCLASSIFIED)
Attachments: 619NR-RIVERWATCH6-11.pdf

Classification: UNCLASSIFIED

Caveats: NONE

-----Original Message-----

From: U.S. Army Corps of Engineers Omaha District [mailto:eileen.l.williamson@usace.army.mil]
Sent: Sunday, June 19, 2011 12:28 PM
To: Williamson, Eileen L NWO
Subject: Riverwatch June 19, 2011 #2011MoRivFlood

Missouri River Mainstem Reservoir Bulletin (Updated 19 Jun; 0900 CDT) Fort Peck(In operation since 1940) Midnight Elevation

- * 2252.1 ft msl
- * 24-hr Change (-0.1 ft)

Daily Avg. Inflow

- * 50,000 cfs (18 Jun)
- * 67,000 cfs (17 Jun)

Daily Avg. Release

- * 65,500 cfs (18 Jun)
- * 65,600 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 2246 ft msl - 2250 ft msl

Top of Spillway Gates

- * 2250 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 65,000 cfs.
- * Reservoir will use several feet of surcharge storage above the exclusive flood control pool as spillway gates are raised.

Record Pool Elevation (Year)

- * 2251.6 msl (1975)

Record Flow (Year)

- * 35,000 cfs (1975)

Projected Record Flow (Date)

- * 65,000 cfs (Mid June)

Garrison(In operation since 1955)

Midnight Elevation

- * 1853.9 ft msl
- * 24-hr Change (+0.1 ft)

Daily Avg. Inflow

- * 169,000 cfs (18 Jun)
- * 148,000 cfs (17 Jun)

Daily Avg. Release

- * 150,000 cfs (18 Jun)
- * 148,600 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1850 ft msl - 1854 ft msl

Top of Spillway Gates

- * 1854 ft msl

River Stage (Bismarck)

- * 18.82 (0815 CDT 19 Jun)
- * Flood stage - 16 ft
- * 18.71 (0715 CDT 18 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 150,000 cfs.
- * Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

- * 1854.8 msl (1975)

Record Flow (Year)

- * 65,000 cfs (1975)

Projected Record Flow (Date)

- * 150,000 cfs (Mid June)

Oahe(In operation since 1962)

Midnight Elevation

- * 1618.5 ft msl
- * 24-hr Change (-0.2 ft)

Daily Avg. Inflow

- * 156,000 cfs (18 Jun)
- * 156,000 cfs (17 Jun)

Daily Avg. Release

- * 153,600 cfs (18 Jun)
- * 150,500 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1617 ft msl - 1620 ft msl

Top of Spillway Gates

* 1620 ft msl

River Stage (Pierre)

* 19.11 (0830 CDT 19 Jun)

* Flood stage - 15 ft

* 18.9 (0715 CDT 18 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 160,000 cfs by mid June.

* Reservoir will peak within a foot of the top of the spillway gates at 1619 feet.

Record Pool Elevation (Year)

* 1618.7 msl (1995)

Record Flow (Year)

* 59,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Mid June)

Big Bend(In operation since 1964)

Midnight Elevation

* 1419.5 ft msl

* 24-hr Change (-0.2 ft)

Daily Avg. Inflow

* 150,000 cfs (18 Jun)

* 150,000 cfs (17 Jun)

Daily Avg. Release

* 153,000 cfs (18 Jun)

* 148,600 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1422 ft msl - 1423 ft msl

Top of Spillway Gates

* 1423 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 160,000 cfs by mid June.

* Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

* 1422.1 msl (1991)

Record Flow (Date)

* 74,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Mid June)

Fort Randall(In operation since 1953)

Midnight Elevation

- * 1364.5 ft msl
- * 24-hr Change (+0.2 ft)

Daily Avg. Inflow

- * 158,000 cfs (18 Jun)
- * 163,000 cfs (17 Jun)

Daily Avg. Release

- * 143,600 cfs (18 Jun)
- * 143,200 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1365 ft msl - 1375 ft msl

Top of Spillway Gates

- * 1375 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up to 148,000 cfs by mid to late June.

Record Pool Elevation (Year)

- * 1372.2 msl (1997)

Record Flow (Date)

- * 67,000 cfs (1997)

Projected Record Flow (Date)

- * 148,000 cfs (Mid to late June)

Gavins Point(In operation since 1955)

Midnight Elevation

- * 1207.7 ft msl
- * 24-hr Change (10.1 ft)

Daily Avg. Inflow

- * 149,000 cfs (18 Jun)
- * 152,000 cfs (17 Jun)

Daily Avg. Release

- * 150,100 cfs (18 Jun)
- * 150,300 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1208 ft msl - 1210 ft msl

Top of Spillway Gates

- * 1210 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 150,000 cfs.

Record Pool Elevation (Year)

* 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Release and inflow figures include a + or - 1% variation Source of information:

<http://www.nwd-mr.usace.army.mil/rcc> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1808703x-675561>>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun; 0900 CDT)

24-hr forecast (Glasgow, MT)

Today: Scattered showers and t-storms, showers likely w/ possible t-storms after 3pm. Mostly cloudy, w/ a high near 72. East NE wind around 9 mph. Chance of precip. 70%.

Tonight: Showers likely w/ possible t-storms before midnight, scattered showers and t-storms after midnight. Mostly cloudy, w/ a low near 57. North NW wind from 6 to 13 mph. Chance of precip. 70%.

Monday: Scattered showers, t-storms also possible after noon. Mostly cloudy, w/ a high near 68. North NW wind from 10 to 15 mph, gusts up to 21 mph. Chance of precip. 50%.

24-hr forecast (Williston, ND)

Today: Showers and t-storms likely, mainly after 1pm. Some storms may produce heavy rains. Mostly cloudy, w/ a high near 72. East wind from 10 to 14 mph, gusts up to 20 mph. Chance of precip. 60%. New rainfall amounts from .10 to .25 of an inch, higher amounts possible in t-storms.

Tonight: Showers and t-storms. Some storms may produce heavy rains. Low near 59. East wind from 6 to 13 mph. Chance of precip. 90%. New rainfall amounts from .5 to .75 inch possible.

Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 8 to 14 mph, gusts up to 18 mph. Chance of precip. 60%. New rainfall amounts from .5 to .75 inch possible.

24-hr forecast (Riverdale, ND)

Today: A 50% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 76. SE wind from 14 to 18 mph, gusts up to 25 mph.

Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind 14 - 17 mph decreasing to from 6 - 9 mph. Winds could gust as high as 24 mph. Chance of precip. 70%. New rainfall amounts from .75 - 1 inch possible.

Monday: A 50% chance of showers and t-storms. Some storms may produce heavy rains. Cloudy, w/ a high near 63. East wind from 14 - 16 mph, gusts up to 23 mph. New rainfall amounts from .5 - .75 inch possible.

24-hr forecast (Washburn, ND)

Today: A 40% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 16 - 20 mph, gusts up to 28 mph.

Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 7 - 17 mph, gusts up to 24 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible.

Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 63. NE wind from 14 - 17 mph, gusts up to 24 mph. Chance of precip. 60%. New rainfall amounts from .5 - .75 inch possible.

24-hr forecast (Bismarck/Mandan, ND)

Today: A 40% chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 17 - 21 mph, gusts up to 29 mph.

Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 6 - 16 mph, gusts up to 23 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible.

Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 15 - 18 mph, gusts up to 25 mph. Chance of precip. 60%. New rainfall amounts from .75 - 1 inch possible.

24-hr forecast (Pierre, SD)

Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 77. SE wind from 13 - 17 mph. Chance of precip. 60%.

Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 11 mph. Chance of precip. 80%.

Monday: Showers and t-storms. High near 69. North NE wind from 10 - 17 mph. Chance of precip. 80%.

24-hr forecast (Ft. Pierre, SD)

Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 79. SE wind from 13 - 17 mph. Chance of precip. 60%.

Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 10 mph. Chance of precip. 80%.

Monday: Showers and t-storms. High near 70. North NE wind from 10 - 17 mph. Chance of precip. 80%.

24-hr forecast (Lower Brule, SD)

Today: A 40% chance of showers and t-storms after 1pm. Some storms could be severe. Partly sunny, w/ a high near 81. SE wind from 14 - 17 mph.

Tonight: Showers likely and possibly a t-storm, then showers and t-storms after 7pm. Some storms could be severe and produce heavy rainfall. Low near 62. East wind from 9 - 11 mph. Chance of precip. 80%.

Monday: Showers and t-storms. High near 72. NE wind from 9 - 15 mph. Chance of precip. 80%.

24-hr forecast (Chamberlain, SD)

Today: A chance of showers and t-storms after 1pm. Partly sunny, w/ a high near 82. SE wind from 11 - 14 mph. Chance of precip. 40%.

Tonight: Showers and t-storms. Low near 63. East wind from 6 - 9 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.

Monday: Showers and t-storms. High near 73. NE wind from 7 - 16 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.

24-hr forecast (Yankton, SD)

Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 83. SE wind from 10 - 13 mph. Chance of precip. 20%.

Tonight: Showers and t-storms likely, mainly from 1am - 4am. Mostly cloudy, w/ a low near 67. East wind from 9 - 13 mph. Chance of precip. 60%. New rainfall amounts from .25 - .5 inch possible.

Monday: A chance of showers and t-storms. Partly sunny, w/ a high near 82. East NE wind from 8 - 11 mph. Chance of precip. 50%.

24-hr forecast (Sioux City, IA)

Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 84. East SE wind from 9 - 11 mph. Chance of precip. 20%.

Tonight: A chance of showers and t-storms, mainly after 7pm. Mostly cloudy, w/ a low near 67. East wind from 10 - 14 mph. Chance of precip. 50%.

Monday: A chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 86. East SE wind from 8 - 13 mph. Chance of precip. 40%.

24-hr forecast (Omaha, NE)

Today: Mostly sunny, w/ a high near 86. SE wind from 8 - 14 mph.

Tonight: A 40% chance of showers and t-storms. Some storms could be severe, with large hail and damaging winds. Mostly cloudy, w/ a low near 71. East SE wind from 13 - 16 mph, gusts up to 24 mph. New rainfall amounts from .1 - .25 of an inch, except higher amounts possible in t-storms.

Monday: Sunny, w/ a high near 91. South SE wind from 13 - 17 mph, gusts up to 26 mph.

Source of information: <http://www.weather.gov/> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1808702x-1195598>>
Internet: <http://www.nwo.usace.army.mil> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1808701x-1715635>>
Facebook: <http://www.facebook.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1808700x-2235672>>

Twitter: <http://www.twitter.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1808699x-426982>>
YouTube: <http://www.youtube.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1808698x-947020>>
Flickr: <http://www.flickr.com/photos/omahausace> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1808697x-1467058>>

<<http://us.vocuspr.com/Url.aspx?520028x1808704x-155524>>

If you would rather not receive future communications from U.S. Army Corps of Engineers Omaha District, let us know by clicking here. <<http://USACEARMY.pr-optout.com/OptOut.aspx?520028x24691x318189x3x1874483x24000x6&Email=eileen.l.williamson%40usace.army.mil>>

U.S. Army Corps of Engineers Omaha District, 1616 Capitol Ave, Omaha, NE 68102 United States

Classification: UNCLASSIFIED

Caveats: NONE



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem Reservoir Bulletin (Updated 19 Jun; 0900 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Omaha (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation <ul style="list-style-type: none"> 2252.1 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 50,000 cfs (18 Jun) 67,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 65,500 cfs (18 Jun) 65,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 2246 ft msl – 2250 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 2250 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 65,000 cfs. Reservoir will use several feet of surcharge storage above the exclusive flood control pool as spillway gates are raised. Record Pool Elevation (Year) <ul style="list-style-type: none"> 2251.6 msl (1975) Record Flow (Year) <ul style="list-style-type: none"> 35,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none"> 65,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1853.9 ft msl 24-hr Change (+0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 169,000 cfs (18 Jun) 148,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 150,000 cfs (18 Jun) 148,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1850 ft msl – 1854 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1854 ft msl River Stage (Bismarck) <ul style="list-style-type: none"> 18.82 (0815 CDT 19 Jun) Flood stage – 16 ft 18.71 (0715 CDT 18 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 150,000 cfs. Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1854.8 msl (1975) Record Flow (Year) <ul style="list-style-type: none"> 65,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none"> 150,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1618.5 ft msl 24-hr Change (-0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 156,000 cfs (18 Jun) 156,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 153,600 cfs (18 Jun) 150,500 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1617 ft msl – 1620 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1620 ft msl River Stage (Pierre) <ul style="list-style-type: none"> 19.11 (0830 CDT 19 Jun) Flood stage – 15 ft 18.9 (0715 CDT 18 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 160,000 cfs by mid June. Reservoir will peak within a foot of the top of the spillway gates at 1619 feet. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1618.7 msl (1995) Record Flow (Year) <ul style="list-style-type: none"> 59,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 160,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1419.5 ft msl 24-hr Change (-0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 150,000 cfs (18 Jun) 150,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 153,600 cfs (18 Jun) 148,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1422 ft msl – 1423 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1423 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 160,000 cfs by mid June. Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1422.1 msl (1991) Record Flow (Date) <ul style="list-style-type: none"> 74,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 160,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1364.5 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 158,000 cfs (18 Jun) 163,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 143,600 cfs (18 Jun) 143,200 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1365 ft msl – 1375 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1375 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 148,000 cfs by mid to late June. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1372.2 msl (1997) Record Flow (Date) <ul style="list-style-type: none"> 67,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 148,000 cfs (Mid to late June) 	Midnight Elevation <ul style="list-style-type: none"> 1207.7 ft msl 24-hr Change (10.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 149,000 cfs (18 Jun) 152,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 150,100 cfs (18 Jun) 150,300 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1208 ft msl – 1210 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1210 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 150,000 cfs. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1209.7 msl (2010) Record Flow (Date) <ul style="list-style-type: none"> 70,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 150,000 cfs (Mid June)

Release and inflow figures include a + or - 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun; 0900 CDT)

Fort Peck	Garrison	Osage	Big Bend	Fort Randall	Gavins Point
<p>24-hr forecast (Glasgow, MT) Today: Scattered showers and t-storms, showers likely w/ possible t-storms after 3pm. Mostly cloudy, w/ a high near 72. East NE wind around 9 mph. Chance of precip. 70%.</p> <p>Tonight: Showers likely w/ possible t-storms before midnight, scattered showers and t-storms after midnight. Mostly cloudy, w/ a low near 57. North NW wind from 6 to 13 mph. Chance of precip. 70%.</p> <p>Monday: Scattered showers, t-storms also possible after noon. Mostly cloudy, w/ a high near 68. North NW wind from 10 to 15 mph, gusts up to 21 mph. Chance of precip. 50%.</p> <p>24-hr forecast (Williston, ND) Today: Showers and t-storms likely, mainly after 1pm. Some storms may produce heavy rains. Mostly cloudy, w/ a high near 72. East wind from 10 to 14 mph, gusts up to 20 mph. Chance of precip. 60%. New rainfall amounts from .10 to .25 of an inch, higher amounts possible in t-storms.</p> <p>Tonight: Showers and t-storms. Some storms may produce heavy rains. Low near 59. East wind from 6 to 13 mph. Chance of precip. 90%. New rainfall amounts from .5 to .75 inch possible.</p> <p>Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 8 to 14 mph, gusts up to 18 mph. Chance of precip. 60%. New rainfall amounts from .5 to .75 inch possible.</p>	<p>24-hr forecast (Riverdale, ND) Today: A 50% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 76. SE wind from 14 to 18 mph, gusts up to 25 mph.</p> <p>Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind 14 - 17 mph decreasing to from 6 - 9 mph. Winds could gust as high as 24 mph. Chance of precip. 70%. New rainfall amounts from .75 - 1 inch possible.</p> <p>Monday: A 50% chance of showers and t-storms. Some storms may produce heavy rains. Cloudy, w/ a high near 63. East wind from 14 - 16 mph, gusts up to 23 mph. New rainfall amounts from .5 - .75 inch possible.</p> <p>24-hr forecast (Washburn, ND) Today: A 40% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 16 - 20 mph, gusts up to 28 mph.</p> <p>Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 7 - 17 mph, gusts up to 24 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible.</p> <p>Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 63. NE wind from 14 - 17 mph, gusts up to 24 mph. Chance of precip. 60%. New rainfall amounts from .5 - .75 inch possible.</p>	<p>24-hr forecast (Pierre, SD) Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 77. SE wind from 13 - 17 mph. Chance of precip. 60%.</p> <p>Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 11 mph. Chance of precip. 80%.</p> <p>Monday: Showers and t-storms. High near 69. North NE wind from 10 - 17 mph. Chance of precip. 80%.</p> <p>24-hr forecast (Ft. Pierre, SD) Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 79. SE wind from 13 - 17 mph. Chance of precip. 60%.</p> <p>Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 10 mph. Chance of precip. 80%.</p> <p>Monday: Showers and t-storms. High near 70. North NE wind from 10 - 17 mph. Chance of precip. 80%.</p>	<p>24-hr forecast (Lower Brule, SD) Today: A 40% chance of showers and t-storms after 1pm. Some storms could be severe. Partly sunny, w/ a high near 81. SE wind from 14 - 17 mph.</p> <p>Tonight: Showers likely and possibly a t-storm, then showers and t-storms after 7pm. Some storms could be severe and produce heavy rainfall. Low near 62. East wind from 9 - 11 mph. Chance of precip. 80%.</p> <p>Monday: Showers and t-storms. High near 72. NE wind from 9 - 15 mph. Chance of precip. 80%.</p>	<p>24-hr forecast (Chamberlain, SD) Today: A chance of showers and t-storms after 1pm. Partly sunny, w/ a high near 82. SE wind from 11 - 14 mph. Chance of precip. 40%.</p> <p>Tonight: Showers and t-storms. Low near 63. East wind from 6 - 9 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.</p> <p>Monday: Showers and t-storms. High near 73. NE wind from 7 - 16 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.</p>	<p>24-hr forecast (Yankton, SD) Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 83. SE wind from 10 - 13 mph. Chance of precip. 20%.</p> <p>Tonight: Showers and t-storms likely, mainly from 1am - 4am. Mostly cloudy, w/ a low near 67. East wind from 9 - 13 mph. Chance of precip. 60%. New rainfall amounts from .25 - .5 inch possible.</p> <p>Monday: A chance of showers and t-storms. Partly sunny, w/ a high near 82. East NE wind from 8 - 11 mph. Chance of precip. 50%.</p> <p>24-hr forecast (Sioux City, IA) Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 84. East SE wind from 9 - 11 mph. Chance of precip. 20%.</p> <p>Tonight: A chance of showers and t-storms, mainly after 7pm. Mostly cloudy, w/ a low near 67. East wind from 10 - 14 mph. Chance of precip. 50%.</p> <p>Monday: A chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 86. East SE wind from 8 - 13 mph. Chance of precip. 40%.</p>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun; 0900 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
	<p>24-hr forecast <i>(Bismarck/Mandan, ND)</i></p> <p>Today: A 40% chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 17 - 21 mph, gusts up to 29 mph.</p> <p>Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 6 - 16 mph, gusts up to 23 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible.</p> <p>Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 15 - 18 mph, gusts up to 25 mph. Chance of precip. 60%. New rainfall amounts from .75 - 1 inch possible.</p>				<p>24-hr forecast (Omaha, NE)</p> <p>Today: Mostly sunny, w/ a high near 86. SE wind from 8 - 14 mph.</p> <p>Tonight: A 40% chance of showers and t-storms. Some storms could be severe, with large hail and damaging winds. Mostly cloudy, w/ a low near 71. East SE wind from 13 - 16 mph, gusts up to 24 mph. New rainfall amounts from .1 - .25 of an inch, except higher amounts possible in t-storms.</p> <p>Monday: Sunny, w/ a high near 91. South SE wind from 13 - 17 mph, gusts up to 26 mph.</p>

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

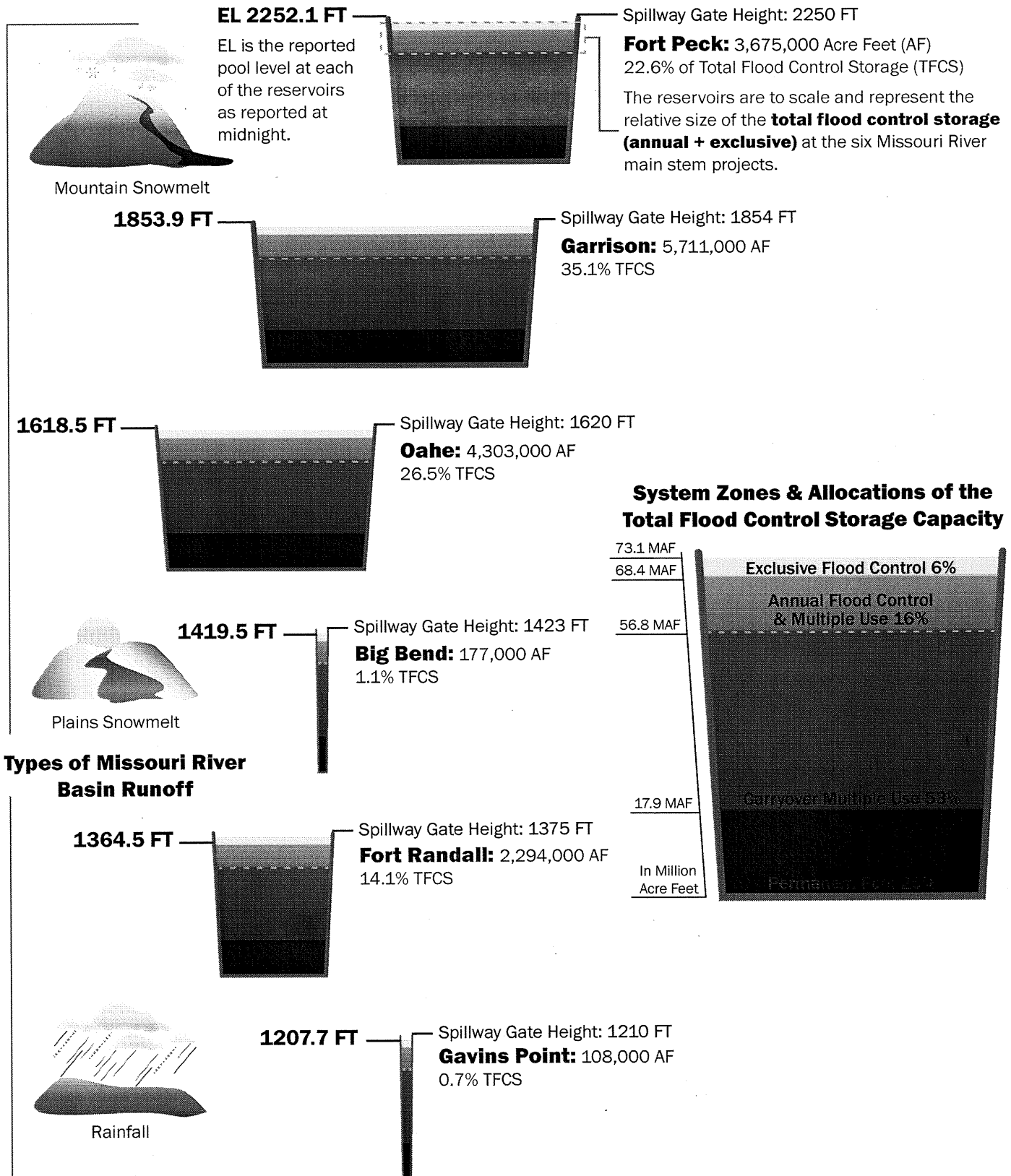
Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Main Stem Reservoir System

Midnight Elevation (EL) Forecast: June 19, 2011 (feet above mean sea level)



[REDACTED] NWO

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 12:21 PM
To: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S NWD02; Bertino, John J Jr NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Flood Report #17 - Fort Peck (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

All:

Releases from Fort Peck continue at 65,000 cfs with 13,000 cfs through the power plants and 52,000 cfs through the spillway. Fort Peck's pool elevation was 2252.10 this morning. Our 24 hour surveillance continues with no issues on the dam or spillway.

Tourists continue to visit the spillway area in high numbers.

[REDACTED]
U.S. Army Corps of Engineers
Operations Project Manager
Fort Peck Project
Fort Peck, Montana 59223
PH: [REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: [REDACTED] NWD02
Sent: Sunday, June 19, 2011 12:09 PM
To: DLL-CENWD-PDR
Cc: [REDACTED] NWD02; [REDACTED] NWO
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 - Update (UNCLASSIFIED)
Attachments: 550overtop.pdf; 550_overtop.jpg

Classification: UNCLASSIFIED
Caveats: NONE

FYSA.

[REDACTED]
Reservoir Regulation Team Lead
Missouri River Basin Water Management,
Northwestern Division, USACE
402.996.3870
402.996.3898 (fax)

-----Original Message-----

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 11:45 AM
To: CE-UOC HQ02; DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; [REDACTED] NWK
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 - Update (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

All,

The levee sponsor along with the local, county, and State officials have determined that the amount of overtopping and severe erosion is too extensive to floodfight on L-550. Failure appears to be imminent as the erosion is occurring rapidly. The local, county and state officials are now concentrating their efforts on evacuation and road closures.

The photo attached was taken about 2 hours ago. Also a map is included of the area that was first overtopped this morning.

Thanks,

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[REDACTED]@usace.army.mil

-----Original Message-----

From: CENWO-EOC NWO
Sent: Sunday, June 19, 2011 10:48 AM
To: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
NWO; [REDACTED] NWO; Williamson, Eileen L NWO
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550
(UNCLASSIFIED)

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 10:48:16 AM
To: CE-UOC HQ02; DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; MRJIC; [REDACTED] NWK
Subject: RE: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550
(UNCLASSIFIED) Auto forwarded by a Rule

Classification: UNCLASSIFIED
Caveats: NONE

Update to Missouri River L-550 Overtop

As of 1000: The area is located 1/4 of a mile North of the Brownville Bridge, HWY 136 on the Missouri side. The current report is that the water is flowing over the levee by approximately 6" for a stretch of 300 yds. The levee sponsor, working with the County and State are working to get the State of MO air assets in place to drop sandbags in this area to stop the flow. The State of MO is currently quoting an ETA of 1500 of air asset arrival. USACE has large sandbags enroute to the location.

As of 1045: USACE personnel are flying it now and report there are many overtopping areas with material moving, would be very hard to bag the extensive lengths of these areas.

Areas of potential impact include the towns of Watson and Phelps City, MO.
Population totals: 361
Total buildings: 332
Total buildings - Residential: 317
Area protected: 63 square miles

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[REDACTED]@usace.army.mil

-----Original Message-----
From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 10:08 AM
To: CE-UOC HQ02
Cc: [REDACTED] NWO
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550
(UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

-----Original Message-----

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 7:46 AM
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; MRJIC; DLL-HQ-UOCInternal; CENWO-EOC NWO
Subject: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

All,

WHO: US Army Corps of Engineers, Omaha District
WHAT: Federal Levee Overtop - Missouri River PL 84-99 Federal Levee - L-550, Operated and Maintained by a local levee sponsor, built by USACE.
WHEN: 19 June 2011 at 0500
WHERE: Missouri River Levee Unit L-550, Sponsor reported overtopping occurring in several locations north (upstream) of Highway 136 in Atchison County, MO.
WHY: Water levels at the Brownsville gage increased approximately 2 feet in a 24 hour period from 0530 18 June to 0530 19 June. Officials from the State of Missouri and FEMA Region VII have been notified. Atchison County Emergency Management is recommending evacuations for all west of Interstate 29 in Atchison County, Missouri.

[REDACTED]
Natural Disaster Program Manager, Readiness Branch U.S. Army Corps of Engineers, Omaha District
1616 Capitol Ave, Ste 9000 (Attn: CENWO-OD-E) Omaha, NE 68102-9000
Phone: ([REDACTED])
Cell: ([REDACTED])
Fax: ([REDACTED])
[REDACTED]@usace.army.mil

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

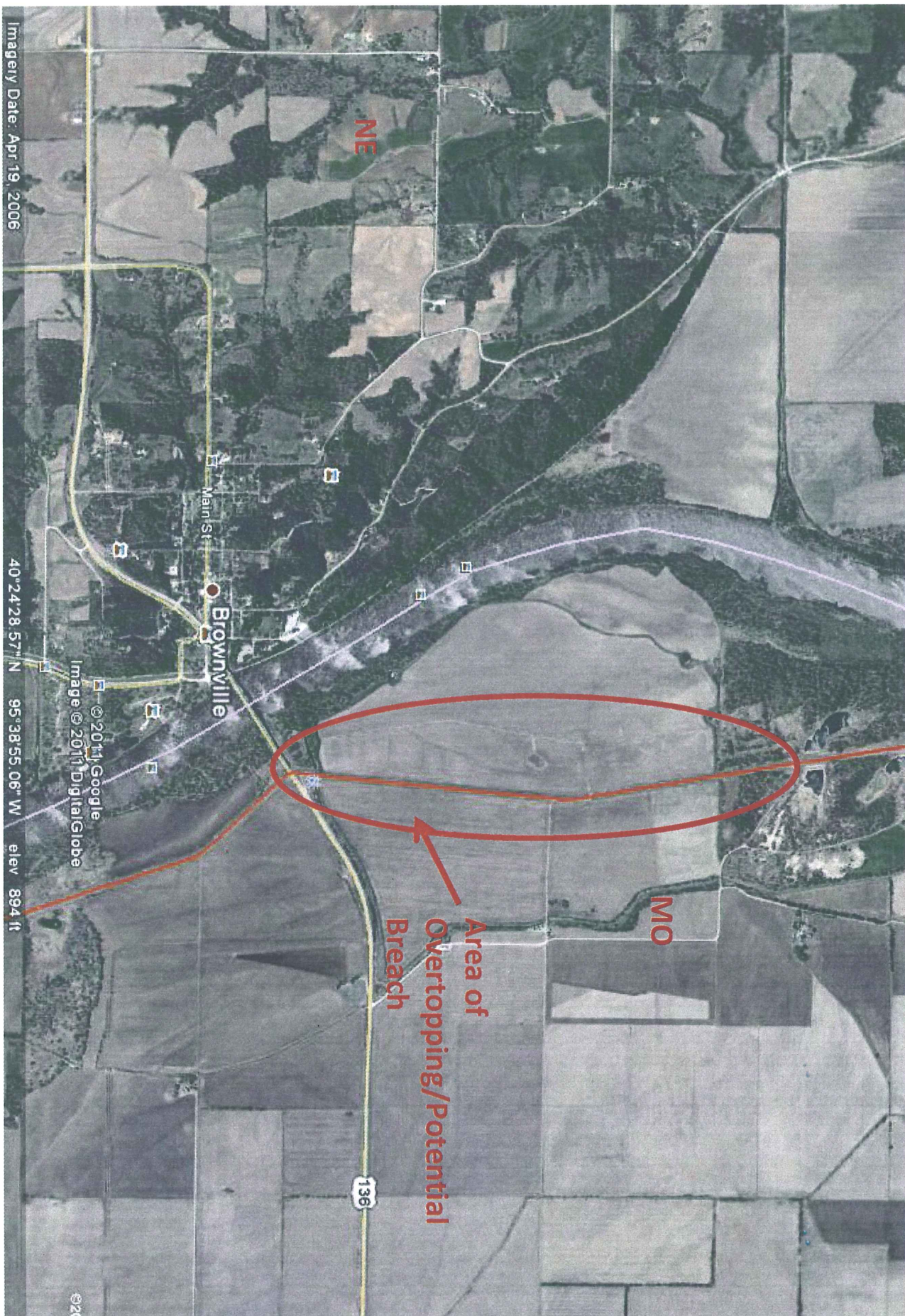
Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE





NWO

From: MRJIC
Sent: Sunday, June 19, 2011 11:58 AM
To: Farhat, Jody S NWD02
Subject: RE: Ft. Peck Reservoir (UNCLASSIFIED)

Jody,

Could you please help me put together a response for the question addressed below.

Thanks

-----Original Message-----

From: douglas baty [mailto: [REDACTED]]
Sent: Saturday, June 18, 2011 7:44 AM
To: MRJIC
Subject: Re: Ft. Peck Reservoir (UNCLASSIFIED)

Good morning. I'm quite interested in how the Corps is managing to handle all the water flowing out of Montana now. Today's Missoulian states that the elevation at Fort Peck is 2 feet above full pool, yet your note says there is still 2 MAF of storage available(as of June 12). The Corps site I found states the elevation, but does not state inflow/outflow, nor does it state what full pool is. Could you clarify this for me? Thanks. Douglas Baty-Dixon Montana.

On Jun 12, 2011, at 9:38 AM, MRJIC wrote:

> Classification: UNCLASSIFIED
> Caveats: NONE

>
>
>

> -----Original Message-----

> **From:** MRJIC
> **Sent:** Sunday, June 12, 2011 10:36 AM
> **To:** ' [REDACTED] '
> **Subject:** Ft. Peck Reservoir (UNCLASSIFIED)

>
> Classification: UNCLASSIFIED
> Caveats: NONE

>
>

> Mr. Baty: Thank you for your question. Ft Peck has a total storage capacity slightly greater than 21 million acre feet (MAF). Currently, Ft. Peck storage is at just less than 19 MAF.

>
> [REDACTED]
>
>
>

> [REDACTED]
> Reservoir Regulation Team Lead
> Missouri River Basin Water Management, Northwestern Division, USACE
> [REDACTED]

> [REDACTED] (fax)

> -----Original Message-----

> **From:** douglas baty [mailto: [REDACTED]]
> **Sent:** Saturday, June 11, 2011 7:48 AM

> To: Management, Missouri Water NWD02
> Subject: Fort Peck Reservoir
>
> Hello: I am attempting to learn how much storage capacity is still
> available in the Fort Peck Reservoir. Could you please direct me to
> where this information can be found? Thanks, Douglas Baty
>
> Classification: UNCLASSIFIED
> Caveats: NONE
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> Classification: UNCLASSIFIED
> Caveats: NONE
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> Classification: UNCLASSIFIED
> Caveats: NONE
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>
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NWO

From: Williamson, Eileen L NWO
Sent: Sunday, June 19, 2011 11:56 AM
To: MRJIC; Bartruff, Robert J Jr MAJ SAS; Bertino, John J Jr NWO; [REDACTED] NWD;
[REDACTED] NWO; 'bruce.sullivan@noaa.gov'; 'bruce.terry@noaa.gov'; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Davis, Joseph M Maj NWO;
DLL-CENWO-EOC CMT-ALL; [REDACTED] NWO; [REDACTED] NWO; Farhat,
Jody S NWD02; Farmer, Monique L NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; Johnston, Paul T HQ@ NWO;
[REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWD;
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWD; [REDACTED]
NWK; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; 'michael.eckert@noaa.gov';
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] M NWO; Rick Wilson -
USGS; 'robert.kelly@noaa.gov'; [REDACTED] NWK; Ruch, Robert J COL NWO;
[REDACTED] NWO; [REDACTED] NWO; Tipton, Robert A Col NWD; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] X NWO; Williamson, Eileen L NWO;
[REDACTED] ERDC-CHL-MS
Subject: Riverwatch June 19, 2011 (UNCLASSIFIED)
Attachments: Flood_Fight_Storyboard_19JUN.DOCX

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Mainstem Reservoir Bulletin (Updated 19 Jun; 0900 CDT)

Fort Peck(In operation since 1940)

Midnight Elevation

- * 2252.1 ft msl
- * 24-hr Change (-0.1 ft)

Daily Avg. Inflow

- * 50,000 cfs (18 Jun)
- * 67,000 cfs (17 Jun)

Daily Avg. Release

- * 65,500 cfs (18 Jun)
- * 65,600 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 2246 ft msl - 2250 ft msl

Top of Spillway Gates

* 2250 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 65,000 cfs.

* Reservoir will use several feet of surcharge storage above the exclusive flood control pool as spillway gates are raised.

Record Pool Elevation (Year)

* 2251.6 msl (1975)

Record Flow (Year)

* 35,000 cfs (1975)

Projected Record Flow (Date)

* 65,000 cfs (Mid June)

Garrison(In operation since 1955)

Midnight Elevation

* 1853.9 ft msl

* 24-hr Change (+0.1 ft)

Daily Avg. Inflow

* 169,000 cfs (18 Jun)

* 148,000 cfs (17 Jun)

Daily Avg. Release

* 150,000 cfs (18 Jun)

* 148,600 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1850 ft msl - 1854 ft msl

Top of Spillway Gates

* 1854 ft msl

River Stage (Bismarck)

* 18.82 (0815 CDT 19 Jun)

* Flood stage - 16 ft

* 18.71 (0715 CDT 18 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

* Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

* 1854.8 msl (1975)

Record Flow (Year)

* 65,000 cfs (1975)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Oahe(In operation since 1962)

Midnight Elevation

* 1618.5 ft msl

* 24-hr Change (-0.2 ft)

Daily Avg. Inflow

* 156,000 cfs (18 Jun)

* 156,000 cfs (17 Jun)

Daily Avg. Release

* 153,600 cfs (18 Jun)

* 150,500 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1617 ft msl - 1620 ft msl

Top of Spillway Gates

* 1620 ft msl

River Stage (Pierre)

* 19.11 (0830 CDT 19 Jun)

* Flood stage - 15 ft

* 18.9 (0715 CDT 18 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 160,000 cfs by mid June.

* Reservoir will peak within a foot of the top of the spillway gates at 1619 feet.

Record Pool Elevation (Year)

* 1618.7 msl (1995)

Record Flow (Year)

* 59,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Mid June)

Big Bend(In operation since 1964)

Midnight Elevation

* 1419.5 ft msl

* 24-hr Change (-0.2 ft)

Daily Avg. Inflow

* 150,000 cfs (18 Jun)

* 150,000 cfs (17 Jun)

Daily Avg. Release

* 153,000 cfs (18 Jun)

* 148,600 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1422 ft msl - 1423 ft msl

Top of Spillway Gates

* 1423 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 160,000 cfs by mid June.

* Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

* 1422.1 msl (1991)

Record Flow (Date)

* 74,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Mid June)

Fort Randall(In operation since 1953)

Midnight Elevation

* 1364.5 ft msl

* 24-hr Change (+0.2 ft)

Daily Avg. Inflow

* 158,000 cfs (18 Jun)

* 163,000 cfs (17 Jun)

Daily Avg. Release

* 143,600 cfs (18 Jun)

* 143,200 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1365 ft msl - 1375 ft msl

Top of Spillway Gates

* 1375 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 148,000 cfs by mid to late June.

Record Pool Elevation (Year)

* 1372.2 msl (1997)

Record Flow (Date)

* 67,000 cfs (1997)

Projected Record Flow (Date)

* 148,000 cfs (Mid to late June)

Gavins Point(In operation since 1955)

Midnight Elevation

* 1207.7 ft msl

* 24-hr Change (10.1 ft)

Daily Avg. Inflow

* 149,000 cfs (18 Jun)

* 152,000 cfs (17 Jun)

Daily Avg. Release

* 150,100 cfs (18 Jun)

* 150,300 cfs (17 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1208 ft msl - 1210 ft msl

Top of Spillway Gates

* 1210 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

Record Pool Elevation (Year)

* 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Release and inflow figures include a + or - 1% variation

Source of information: <http://www.nwd-mr.usace.army.mil/rcc>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun; 0900 CDT)

24-hr forecast (Glasgow, MT)

Today: Scattered showers and t-storms, showers likely w/ possible t-storms after 3pm. Mostly cloudy, w/ a high near 72. East NE wind around 9 mph. Chance of precip. 70%.

Tonight: Showers likely w/ possible t-storms before midnight, scattered showers and t-storms after midnight. Mostly cloudy, w/ a low near 57. North NW wind from 6 to 13 mph. Chance of precip. 70%.

Monday: Scattered showers, t-storms also possible after noon. Mostly cloudy, w/ a high near 68. North NW wind from 10 to 15 mph, gusts up to 21 mph. Chance of precip. 50%.

24-hr forecast (Williston, ND)

Today: Showers and t-storms likely, mainly after 1pm. Some storms may produce heavy rains. Mostly cloudy, w/ a high near 72. East wind from 10 to 14 mph, gusts up to 20 mph. Chance of

precip. 60%. New rainfall amounts from .10 to .25 of an inch, higher amounts possible in t-storms.

Tonight: Showers and t-storms. Some storms may produce heavy rains. Low near 59. East wind from 6 to 13 mph. Chance of precip. 90%. New rainfall amounts from .5 to .75 inch possible.

Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 8 to 14 mph, gusts up to 18 mph. Chance of precip. 60%. New rainfall amounts from .5 to .75 inch possible.

24-hr forecast (Riverdale, ND)

Today: A 50% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 76. SE wind from 14 to 18 mph, gusts up to 25 mph.

Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind 14 - 17 mph decreasing to from 6 - 9 mph. Winds could gust as high as 24 mph. Chance of precip. 70%. New rainfall amounts from .75 - 1 inch possible.

Monday: A 50% chance of showers and t-storms. Some storms may produce heavy rains. Cloudy, w/ a high near 63. East wind from 14 - 16 mph, gusts up to 23 mph. New rainfall amounts from .5 - .75 inch possible.

24-hr forecast (Washburn, ND)

Today: A 40% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 16 - 20 mph, gusts up to 28 mph.

Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 7 - 17 mph, gusts up to 24 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible.

Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 63. NE wind from 14 - 17 mph, gusts up to 24 mph. Chance of precip. 60%. New rainfall amounts from .5 - .75 inch possible.

24-hr forecast (Bismarck/Mandan, ND)

Today: A 40% chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 17 - 21 mph, gusts up to 29 mph.

Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 6 - 16 mph, gusts up to 23 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible.

Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 15 - 18 mph, gusts up to 25 mph. Chance of precip. 60%. New rainfall amounts from .75 - 1 inch possible.

24-hr forecast (Pierre, SD)

Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 77. SE wind from 13 - 17 mph. Chance of precip. 60%.

Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 11 mph. Chance of precip. 80%.

Monday: Showers and t-storms. High near 69. North NE wind from 10 - 17 mph. Chance of precip. 80%.

24-hr forecast (Ft. Pierre, SD)

Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 79. SE wind from 13 - 17 mph. Chance of precip. 60%.

Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 10 mph. Chance of precip. 80%.

Monday: Showers and t-storms. High near 70. North NE wind from 10 - 17 mph. Chance of precip. 80%.

24-hr forecast (Lower Brule, SD)

Today: A 40% chance of showers and t-storms after 1pm. Some storms could be severe. Partly sunny, w/ a high near 81. SE wind from 14 - 17 mph.

Tonight: Showers likely and possibly a t-storm, then showers and t-storms after 7pm. Some storms could be severe and produce heavy rainfall. Low near 62. East wind from 9 - 11 mph. Chance of precip. 80%.

Monday: Showers and t-storms. High near 72. NE wind from 9 - 15 mph. Chance of precip. 80%.

24-hr forecast (Chamberlain, SD)

Today: A chance of showers and t-storms after 1pm. Partly sunny, w/ a high near 82. SE wind from 11 - 14 mph. Chance of precip. 40%.

Tonight: Showers and t-storms. Low near 63. East wind from 6 - 9 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.

Monday: Showers and t-storms. High near 73. NE wind from 7 - 16 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.

24-hr forecast (Yankton, SD)

Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 83. SE wind from 10 - 13 mph. Chance of precip. 20%.

Tonight: Showers and t-storms likely, mainly from 1am - 4am. Mostly cloudy, w/ a low near 67. East wind from 9 - 13 mph. Chance of precip. 60%. New rainfall amounts from .25 - .5 inch possible.

Monday: A chance of showers and t-storms. Partly sunny, w/ a high near 82. East NE wind from 8 - 11 mph. Chance of precip. 50%.

24-hr forecast (Sioux City, IA)

Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 84. East SE wind from 9 - 11 mph. Chance of precip. 20%.

Tonight: A chance of showers and t-storms, mainly after 7pm. Mostly cloudy, w/ a low near 67. East wind from 10 - 14 mph. Chance of precip. 50%.

Monday: A chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 86. East SE wind from 8 - 13 mph. Chance of precip. 40%.

24-hr forecast (Omaha, NE)

Today: Mostly sunny, w/ a high near 86. SE wind from 8 - 14 mph.

Tonight: A 40% chance of showers and t-storms. Some storms could be severe, with large hail and damaging winds. Mostly cloudy, w/ a low near 71. East SE wind from 13 - 16 mph, gusts up to 24 mph. New rainfall amounts from .1 - .25 of an inch, except higher amounts possible in t-storms.

Monday: Sunny, w/ a high near 91. South SE wind from 13 - 17 mph, gusts up to 26 mph.

Source of information: <http://www.weather.gov/>
Internet: <http://www.nwo.usace.army.mil>
Facebook: <http://www.facebook.com/OmahaUSACE>
Twitter: <http://www.twitter.com/OmahaUSACE>
YouTube: <http://www.youtube.com/OmahaUSACE>
Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Flooding (Logistics) (Updated 19 Jun; 0900 CDT)

Personnel Deployed

7 (Glasgow, MT)
1 (Garrison, ND)
4 (Bismarck, ND)
1 (Fort Yates, ND)
6 (Williston, ND)
5 (Pierre, SD)
1 (Kansas City, MO)
4 (Sioux City, IA)
1 (S. Sioux City, NE)
1 (Onawa, IA)

16 (Missouri River Survey - 7 teams)

1 (Lincoln, NE)
1 (Offutt, NE)
5 (North Platte, NE)
6 (Hamburg, IA)

Equipment Deployed

HESCO (3' and 4')

Issued: 74,270 LF

On Hand: 30,200 LF

Projected Outstanding Requirements: 35,000 LF

Sandbags

Issued: 14,637,000

On Hand: 6,923,500

Projected Outstanding Requirements: 6.5 M

Poly Rolls

Issued: 2,836 rolls

On Hand: 1,987 rolls

Projected Outstanding Requirements: 1,500 rolls

Pumps

Issued: 48 pumps

On Hand: 4 pumps (3 - serviceable)

Projected Outstanding Requirements: 20 pumps

Slingbags

On Hand: 1,350 slingbags (2K lbs each)

Heavybags

On Hand: 6,420 heavybags (35x35x35 each)

Geotextile

On Hand: 4 rolls (16' wide; 500 sq ft)

Additional Supplies due in:

1 pump in maintenance for parts/repair

4 USACE Pumps inbound

HESCO: 5,500 LF

Source of information: CMT Brief (18 Jun 11)

Classification: UNCLASSIFIED

Caveats: NONE

Missouri River Mainstem Reservoir Bulletin (Updated 19 Jun; 0900 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Cahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation <ul style="list-style-type: none"> 2252.1 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 50,000 cfs (18 Jun) 67,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 65,500 cfs (18 Jun) 65,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 2246 ft msl – 2250 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 2250 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 65,000 cfs. Reservoir will use several feet of surcharge storage above the exclusive flood control pool as spillway gates are raised. Record Pool Elevation (Year) <ul style="list-style-type: none"> 2251.6 msl (1975) Record Flow (Year) <ul style="list-style-type: none"> 35,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none"> 65,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1853.9 ft msl 24-hr Change (+0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 169,000 cfs (18 Jun) 148,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 150,000 cfs (18 Jun) 148,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1850 ft msl – 1854 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1854 ft msl River Stage (Bismarck) <ul style="list-style-type: none"> 18.82 (0815 CDT 19 Jun) Flood stage – 16 ft 18.71 (0715 CDT 18 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 150,000 cfs. Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1854.8 msl (1975) Record Flow (Year) <ul style="list-style-type: none"> 65,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none"> 150,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1618.5 ft msl 24-hr Change (-0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 156,000 cfs (18 Jun) 156,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 153,600 cfs (18 Jun) 150,500 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1617 ft msl – 1620 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1620 ft msl River Stage (Pierre) <ul style="list-style-type: none"> 19.11 (0830 CDT 19 Jun) Flood stage – 15 ft 18.9 (0715 CDT 18 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 160,000 cfs by mid June. Reservoir will peak within a foot of the top of the spillway gates at 1619 feet. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1618.7 msl (1995) Record Flow (Year) <ul style="list-style-type: none"> 59,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 160,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1419.5 ft msl 24-hr Change (-0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 150,000 cfs (18 Jun) 150,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 153,000 cfs (18 Jun) 148,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1422 ft msl – 1423 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1423 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 160,000 cfs by mid June. Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1422.1 msl (1991) Record Flow (Date) <ul style="list-style-type: none"> 74,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 160,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1364.5 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 158,000 cfs (18 Jun) 163,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 143,600 cfs (18 Jun) 143,200 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1365 ft msl – 1375 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1375 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 148,000 cfs by mid to late June. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1372.2 msl (1997) Record Flow (Date) <ul style="list-style-type: none"> 67,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 148,000 cfs (Mid to late June) 	Midnight Elevation <ul style="list-style-type: none"> 1207.7 ft msl 24-hr Change (10.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 149,000 cfs (18 Jun) 152,000 cfs (17 Jun) Daily Avg. Release <ul style="list-style-type: none"> 150,100 cfs (18 Jun) 150,300 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1208 ft msl – 1210 ft msl Top of Spillway Gates <ul style="list-style-type: none"> 1210 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 150,000 cfs. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1209.7 msl (2010) Record Flow (Date) <ul style="list-style-type: none"> 70,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 150,000 cfs (Mid June)

Release and inflow figures include a + or – 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/fcc>



US Army Corps
of Engineers •
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun; 0900 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
24-hr forecast (Glasgow, MT) Today: Scattered showers and t-storms. Showers likely w/ possible t-storms after 3pm. Mostly cloudy, w/ a high near 72. East NE wind around 9 mph. Chance of precip. 70%. Tonight: Showers likely w/ possible t-storms before midnight, scattered showers and t-storms after midnight. Mostly cloudy, w/ a low near 57. North NW wind from 6 to 13 mph. Chance of precip. 70%.	24-hr forecast (Riverdale, ND) Today: A 50% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 76. SE wind from 14 to 18 mph, gusts up to 25 mph. Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind 14 - 17 mph decreasing to from 6 - 9 mph. Winds could gust as high as 24 mph. Chance of precip. 70%. New rainfall amounts from .75 - 1 inch possible.	24-hr forecast (Pierre, SD) Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 77. SE wind from 13 - 17 mph. Chance of precip. 60%. Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 11 mph. Chance of precip. 80%.	24-hr forecast (Lower Brule, SD) Today: A 40% chance of showers and t-storms after 1pm. Some storms could be severe. Partly sunny, w/ a high near 81. SE wind from 14 - 17 mph. Tonight: Showers likely and possibly a t-storm, then showers and t-storms after 7pm. Some storms could be severe and produce heavy rainfall. Low near 62. East wind from 9 - 11 mph. Chance of precip. 80%.	24-hr forecast (Chamberlain, SD) Today: A chance of showers and t-storms after 1pm. Partly sunny, w/ a high near 82. SE wind from 11 - 14 mph. Chance of precip. 40%. Tonight: Showers and t-storms. Low near 63. East wind from 6 - 9 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.	24-hr forecast (Yankton, SD) Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 83. SE wind from 10 - 13 mph. Chance of precip. 20%. Tonight: Showers and t-storms likely, mainly from 1am - 4am. Mostly cloudy, w/ a low near 67. East wind from 9 - 13 mph. Chance of precip. 60%. New rainfall amounts from .25 - .5 inch possible.
Monday: Scattered showers, t-storms also possible after noon. Mostly cloudy, w/ a high near 68. North NW wind from 10 to 15 mph, gusts up to 21 mph. Chance of precip. 50%.	Monday: A 50% chance of showers and t-storms. Some storms may produce heavy rains. Cloudy, w/ a high near 63. East wind from 14 - 16 mph, gusts up to 23 mph. New rainfall amounts from .5 - .75 inch possible.	Monday: Showers and t-storms. High near 69. North NE wind from 10 - 17 mph. Chance of precip. 80%.	Monday: Showers and t-storms. High near 72. NE wind from 9 - 15 mph. Chance of precip. 80%.	Monday: Showers and t-storms. High near 73. NE wind from 7 - 16 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.	Monday: A chance of showers and t-storms. Partly sunny, w/ a high near 82. East NE wind from 8 - 11 mph. Chance of precip. 50%.
24-hr forecast (Williston, ND) Today: Showers and t-storms likely, mainly after 1pm. Some storms may produce heavy rains. Mostly cloudy, w/ a high near 72. East wind from 10 to 14 mph, gusts up to 20 mph. Chance of precip. 80%. New rainfall amounts from .10 to .25 of an inch, higher amounts possible in t-storms.	24-hr forecast (Washburn, ND) Today: A 40% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 16 - 20 mph, gusts up to 28 mph.	24-hr forecast (Ft. Pierre, SD) Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 79. SE wind from 13 - 17 mph. Chance of precip. 60%.			24-hr forecast (Sioux City, IA) Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 84. East SE wind from 9 - 11 mph. Chance of precip. 20%.
Tonight: Showers and t-storms. Some storms may produce heavy rains. Low near 59. East wind from 6 to 13 mph. Chance of precip. 90%. New rainfall amounts from .5 to .75 inch possible.	Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 7 - 17 mph, gusts up to 24 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible.	Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 10 mph. Chance of precip. 80%.			Tonight: A chance of showers and t-storms, mainly after 7pm. Mostly cloudy, w/ a low near 67. East wind from 10 - 14 mph. Chance of precip. 50%.
Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 8 to 14 mph, gusts up to 18 mph. Chance of precip. 60%. New rainfall amounts from .5 to .75 inch possible.	Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 63. NE wind from 14 - 17 mph, gusts up to 24 mph. Chance of precip. 60%. New rainfall amounts from .5 - .75 inch possible.	Monday: Showers and t-storms. High near 70. North NE wind from 10 - 17 mph. Chance of precip. 80%.			Monday: A chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 86. East SE wind from 8 - 13 mph. Chance of precip. 40%.



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Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun; 0900 CDT)

Fort Peck	Garrison	Cahle	Big Bend	Fort Randall	Gavins Point
	24-hr forecast (Bismarck/Mandan, ND) Today: A 40% chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 17 - 21 mph, gusts up to 29 mph. Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 6 - 16 mph, gusts up to 23 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible. Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 15 - 18 mph, gusts up to 25 mph. Chance of precip. 60%. New rainfall amounts from .75 - 1 inch possible.				24-hr forecast (Omaha, NE) Today: Mostly sunny, w/ a high near 86. SE wind from 8 - 14 mph. Tonight: A 40% chance of showers and t-storms. Some storms could be severe, with large hail and damaging winds. Mostly cloudy, w/ a low near 71. East SE wind from 13 - 16 mph, gusts up to 24 mph. New rainfall amounts from .1 - .25 of an inch, except higher amounts possible in t-storms. Monday: Sunny, w/ a high near 91. South SE wind from 13 - 17 mph, gusts up to 26 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Flooding (Logistics) (Updated 19 Jun; 0900 CDT)

Personnel Deployed

7 (Glasgow, MT)	5 (Pierre, SD)	16 (Missouri River Survey – 7 teams)
1 (Garrison, ND)	1 (Kansas City, MO)	1 (Lincoln, NE)
4 (Bismarck, ND)	4 (Sioux City, IA)	1 (Offutt, NE)
1 (Fort Yates, ND)	1 (S. Sioux City, NE)	5 (North Platte, NE)
6 (Williston, ND)	1 (Onawa, IA)	6 (Hamburg, IA)

Equipment Deployed

HESCO (3' and 4') Issued: 74,270 LF On Hand: 30,200 LF Projected Outstanding Requirements: 35,000 LF	Slingbags On Hand: 1,350 slingbags (2K lbs each)
Sandbags Issued: 14,637,000 On Hand: 6,923,500 Projected Outstanding Requirements: 6.5 M	Heavybags On Hand: 6,420 heavybags (35x35x35 each)
Poly Rolls Issued: 2,836 rolls On Hand: 1,987 rolls Projected Outstanding Requirements: 1,500 rolls	Geotextile On Hand: 4 rolls (16' wide; 500 sq ft)
Pumps Issued: 48 pumps On Hand: 4 pumps (3 – serviceable) Projected Outstanding Requirements: 20 pumps	Additional Supplies due in: 1 pump in maintenance for parts/repair 4 USACE Pumps inbound HESCO: 5,500 LF

Source of information: CMT Brief (18 Jun 11)

NWO

From: [REDACTED] NWD02
Sent: Sunday, June 19, 2011 11:54 AM
To: Farhat, Jody S NWD02
Subject: Missouri River Basin Water Management Situation Report 6-19-11.docx (UNCLASSIFIED)
Attachments: Missouri River Basin Water Management Situation Report 6-19-11.docx

Classification: UNCLASSIFIED

Caveats: NONE

For review before I send it out.

Thanks

Classification: UNCLASSIFIED

Caveats: NONE

Missouri River Basin Water Management Situation Report – 6-19-11

Reservoir Conditions

The upper three reservoirs of the Missouri River Mainstem Reservoir System provide the bulk of the storage of water. All three are in their exclusive flood control zones, with Fort Peck passing its spillway crest (continuing up on raised spillway gates) and the other two being near their spillway crests. Table 1 summarizes the situation as of 0000 hours this morning. The relatively high inflows that have been coming into Fort Peck and Garrison Reservoirs will likely continue, although inflows into Fort Peck declined today. More details on the reservoirs can be found on the daily bulletin prepared by the Missouri River Basin Water Management Division at: <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULLOMR1>.

Table 1. Key Reservoir Data (through 0000 hrs 6/19/11)

Reservoir	Inflow kcfs	Outflow kcfs	Top of Spillway	Current Level feet msl	24-hr Change feet
			Gates feet msl		
Fort Peck	50.0	65.5	2250	2252.1	-0.1
Garrison	169.0	150.0	1854	1853.9	0.1
Oahe	156.0	153.6	1620	1618.5	-0.2
Big Bend	150.0	153.0	1423	1419.5	-0.2
Fort Randall	158.0	143.6	1375	1364.5	0.2
Gavins Point	149.0	150.1	1210	1207.7	-0.1

Based on the current level data for the upper three reservoirs, the amount of remaining storage has been changing in its distribution among the upper three, larger reservoirs. Fort Peck has become more negative as water is stored higher on the raised spillway gates (surcharged above exclusive flood control), although today Fort Peck is slightly less negative than yesterday. With the increased releases from Fort Peck and the increase in tributary inflows, Garrison Reservoir is rising and will be going into surcharge over the next week and a half. Oahe will not be surcharged because there are no plans at this time to use its spillway, which would result in the raised gates and the potential to surcharge that reservoir. The lower three reservoirs have much less capability to store the inflows that are coming into the Missouri River Mainstem Reservoir System, with Fort Randall Reservoir having the greater amount. As of today, the stored water has not yet entered the exclusive flood control zones of the three smaller reservoirs; therefore, 100 percent of their exclusive flood control storage remains available. Table 2 summarizes the storage volumes of all six System reservoirs, with the last column listing the amount of exclusive flood control storage that remains as of today. Spillways are now being used at five of the six reservoirs, with no plans to use the Oahe spillway at this time.

Table 2. Reservoir Storage Data (through 0000 hrs 6/19/11)

Reservoir	Current kAF	Total kAF	Remaining kAF	Exclusive kAF	% Excl Left
Fort Peck	18,985	18,463	-522	971	-54
Garrison	23,766	23,821	55	1,489	4
Oahe	22,624	23,137	513	1,102	47
Big Bend	1,615	1,798	183	60	100
Fort Randall	4,388	5,418	1,030	985	100
Gavins Point	385	450	65	57	100

Releases from all six reservoirs are currently exceeding records prior to 2011. Table 3 provides release data for all six reservoirs to provide some perspective on the changes that will be happening over the next 2 weeks. Beginning June 17, releases from Oahe and Big Bend reservoirs were increased to 160,000 cfs to gain storage space for future rainfall events affecting Fort Peck and Garrison reservoirs levels. The other reservoir releases are currently being maintained at their anticipated maximum releases. Full listing of the reservoir data through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>.

Table 3. Reservoir Release Comparisons (through 0000 hours 6/19/11)

Reservoir	Yesterday kcfs	Forecast Today kcfs	7 days out 26 June kcfs	14 days out 03 July kcfs	Pre-2011 Record kcfs
Fort Peck	65.5	65	60	60	35
Garrison	150.0	150	150	150	65
Oahe	153.6	160	160	160	59
Big Bend	153.0	160	160	160	74
Fort Randall	143.6	143	148	148	67
Gavins Point	150.1	150	150	150	70

River Conditions

Levees have been constructed by the Corps at numerous locations, resulting primarily from the releases from Garrison, Oahe, and Gavins Point Dams. Many communities along the lower Missouri River are currently experiencing Missouri River flows that are above flood stage by several feet. The flood stages currently being experienced will be exceeded as Missouri River Mainstem Reservoir System releases move through their downstream reaches and inflows from the downstream reaches and localized precipitation joins these high releases. Table 4 summarizes the current conditions as of 0600 hours this morning and the Corps' current forecast for crest stages.

Table 4. Missouri River Stage Data for 6/19/11 at 0600 CDT

Location	Flood Stage	Current Stage	Forecast Crest Stage	Date of Crest Stage
Bismarck, ND	16	18.8	20.6	mid-Jun
Pierre, SD	13	19.1	18.7	mid-Jun
Sioux City, IA	30	33.5	35-37	mid-Jun thru July
Decatur, NE	35	38.3	40-42	mid-Jun thru July
Omaha, NE	29	33.2	34-36	mid-Jun thru July
Nebraska City, NE	18	26.2	27-28+	mid-Jun thru July
St. Joseph, MO	17	23.9	27-32	mid-Jun thru July
Kansas City, MO	32	26.6	30-39	mid-Jun thru July
Waverly, MO	20	24.9	27-31	mid-Jun thru July
Boonville, MO	21	21.7	27-33	mid-Jun thru July
Hermann, MO	21	21.5	27-33	mid-Jun thru July

Figures 1 and 2 present the plots of the 0600 hour stages at Bismarck and Pierre, respectively. The stages at Bismarck have not reached the initial estimated levels as the Garrison Reservoir releases have increased. The reduction is likely due to the scouring of the channel as the flows are well above the levels in recent years. The stages at Pierre have closely followed the estimated levels, being just slightly over the initial estimate for crest elevation, as the upstream Oahe Reservoir releases have reached the 150-kcfs level. Increasing releases from Oahe Reservoir to 160,000 cfs has slightly increased stages at Pierre. However, the stages at both cities are still about 3 feet below the constructed levee crests.

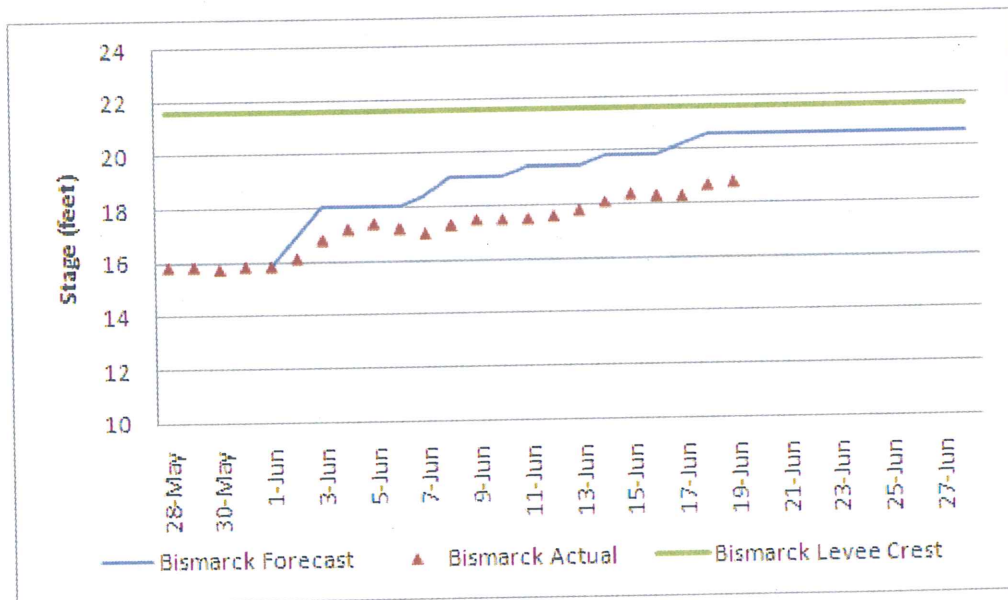


Figure 1. Missouri River stages at Bismarck, North Dakota.

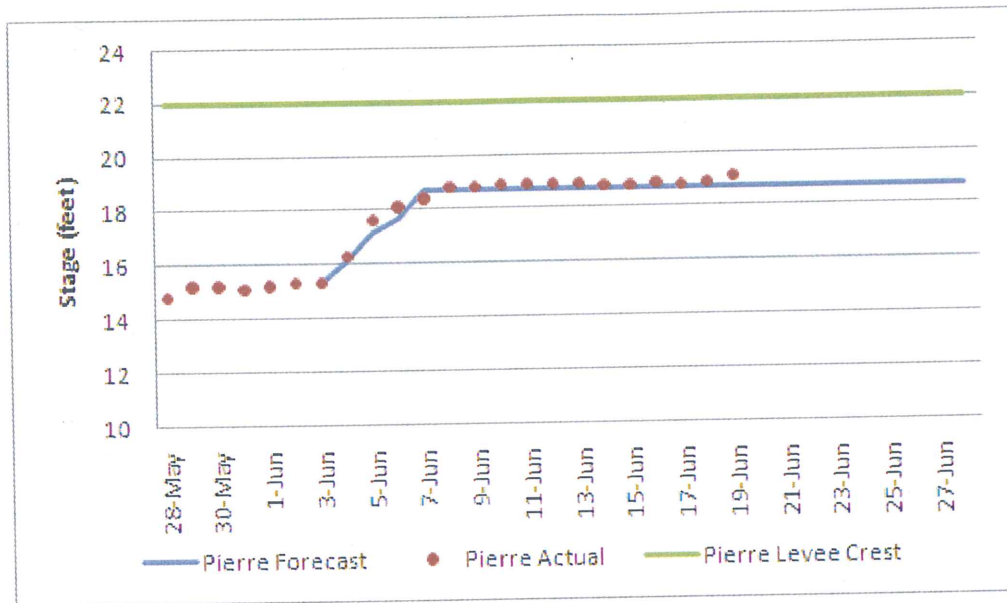


Figure 2. Missouri River stages at Pierre, South Dakota.

Information on Current Mountain Snowpack and Forecasted Rainfall

Releases from the System reservoirs are based on snowpack and rainfall forecasts in the Missouri River basin. An updated snowfall forecast has not yet been prepared today; however, the Hydrometeorological Prediction Center (HPC) of NOAA prepares a rainfall forecast daily for up to the next 5 days, with an accumulated figure also presented on its website. The next 5 days do not look good as widespread moderate to heavy rain is forecasted for much of the Missouri River Basin. Inflows from the heavier forecasted areas would drain into all reservoirs in the System except Fort Peck. Figure 3 is the accumulated 5-day rainfall forecast for today by HPC, and Figure 4 is the June 17 mountain snowpack update by the Corps.

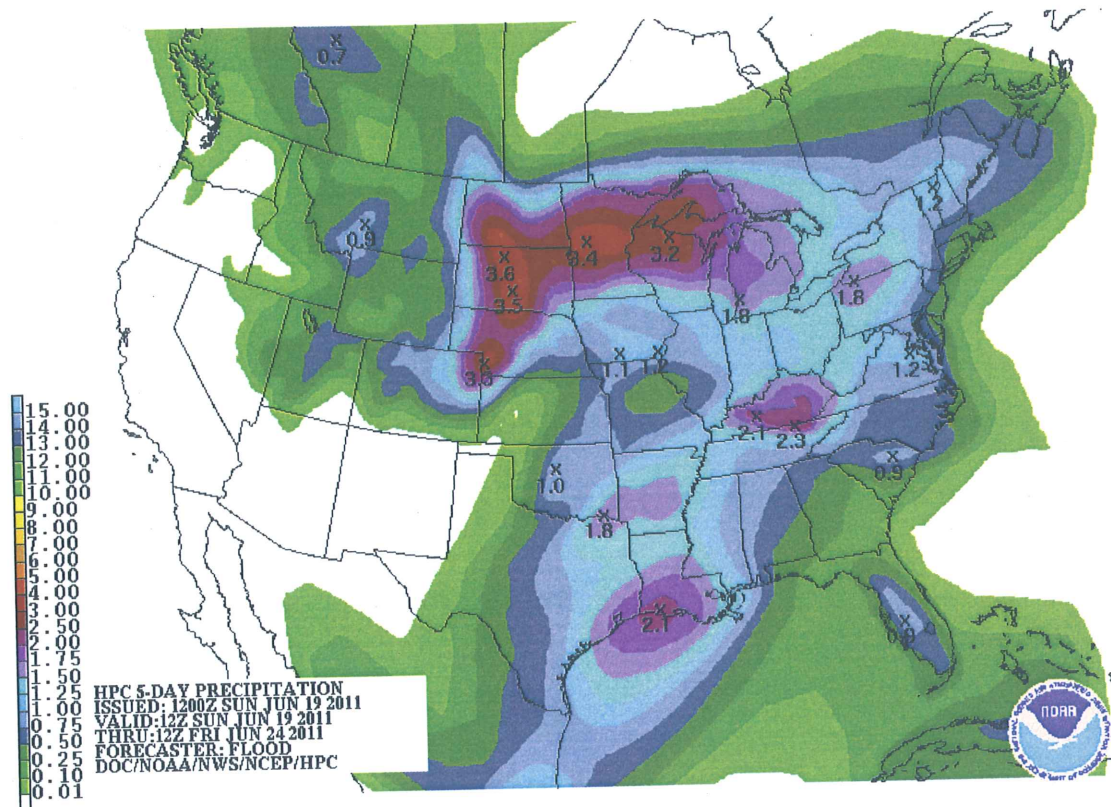
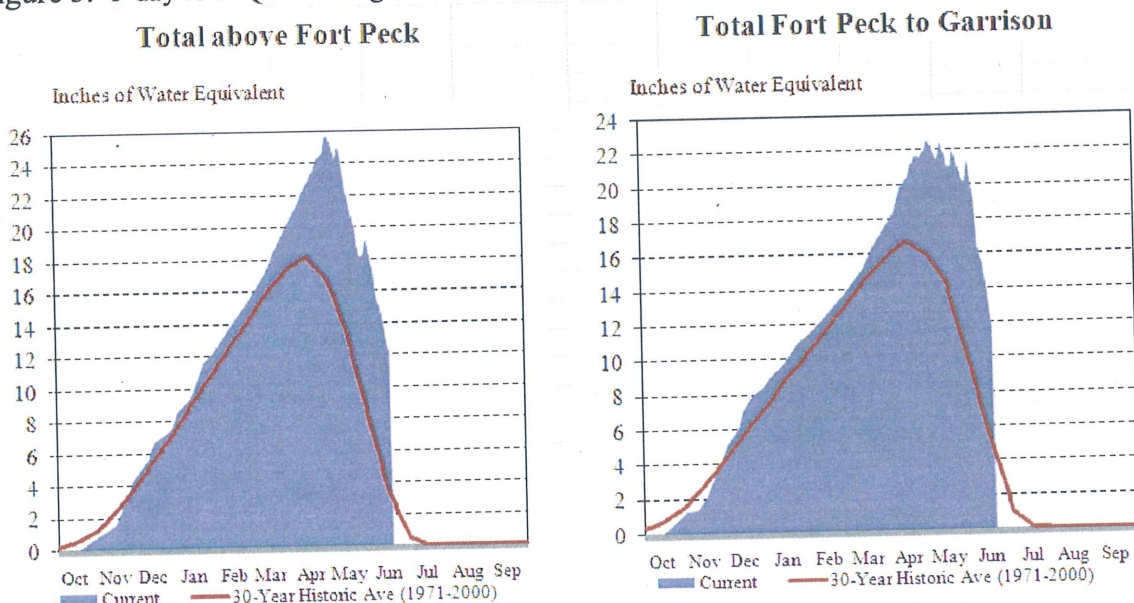


Figure 3. 5-day total QPF ending 0700 Thursday, June 23, 2011.



The Missouri River Basin mountain snowpack normally peaks near April 15. The mountain snowpack in both the "Total above Fort Peck" and the "Total Fort Peck to Garrison" reaches appears to have peaked on May 2 at 141 percent and 136 percent of the normal April 15 peak, respectively. The current mountain snowpack, as of June 17, is 67 percent and 71 percent of the normal April 15 peak in the "Total above Fort Peck" and the "Total Fort Peck to Garrison" reaches, respectively.

June 17, 2011

Provisional data. Subject to revision.

Figure 4. Missouri River basin mountain snowpack water content summary, 2010-2011 – June 17, 2011.

Current Actions and Notable Information

Levee construction been completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System reservoirs. Floodplain evacuations have been ongoing for many lower-lying areas along the lower Missouri River. The most recent of these levees, the Hamburg levee, has also been completed. The failure of levee L-575 occurred at river stages just under the maximum stage in 2010.

Figure 5 is a plot showing the Nebraska City (just across the river from the upper reaches of L-575) 0600 stages for 2010 and 2011 (through today), both years with high river stages. This figure shows that the river level is now above the 2010 maximum.

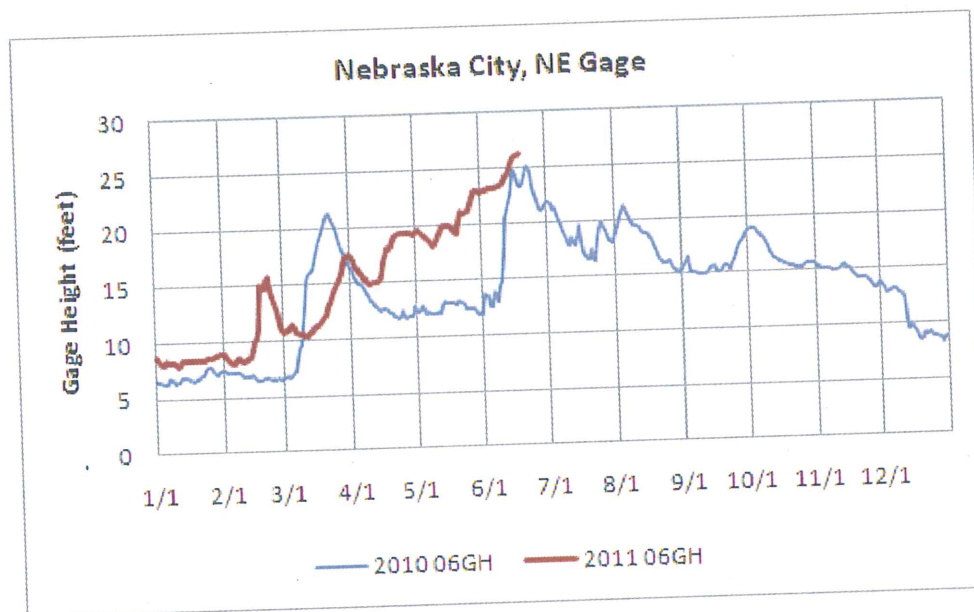


Figure 5. River stages at Nebraska City, Nebraska for 2010 and 2011.

A second levee failed at Big Lake, Missouri Monday, June 13. This location is across the river from Rulo, Nebraska. The gage plot for this location is shown below as Figure 6. Another factor, such as duration of water against the levee or back-to-back years with water against the levee appears to be playing a role in the failure of this levee as well as the levee near Hamburg.

Today, L-550 located north of Highway 136 in Atchison County, Missouri overtopped. Water levels at the Brownsville gauge increased approximately two feet in a 24-hour period from 5:30 a.m. 18 June to 5:30 a.m. 19 June.

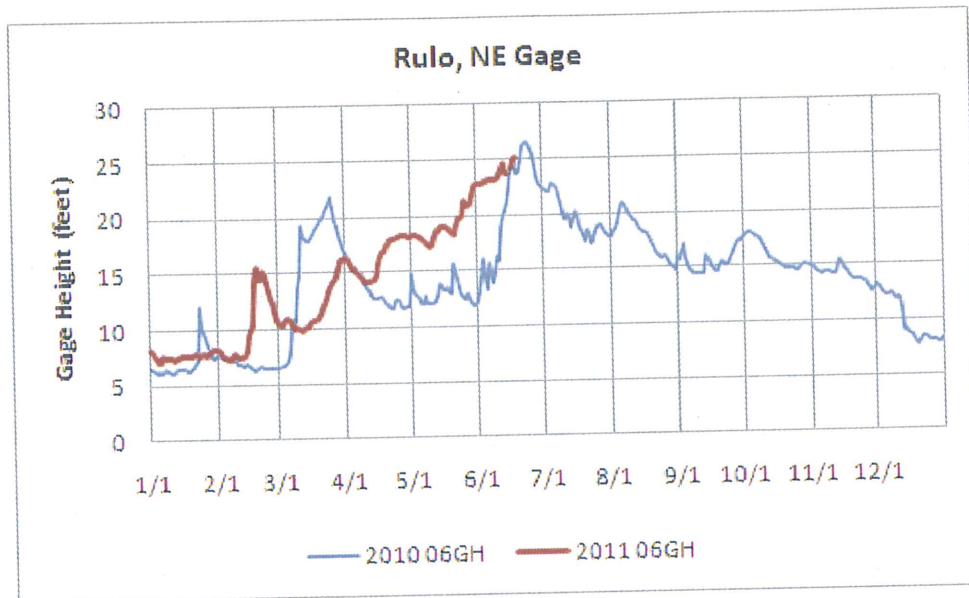


Figure 6. River stages at Rulo, Nebraska for 2010 and 2011.

Heavy rains fell over Eastern Montana and most of the lower basin between 0700 hours yesterday and today. Figure 7 shows the amount of rain that fell in the basin and surrounding area of the Central Region of the United States.

NWS Central Region: Current 1-Day Observed Precipitation
Valid at 6/19/2011 1200 UTC- Created 6/19/11 15:41 UTC

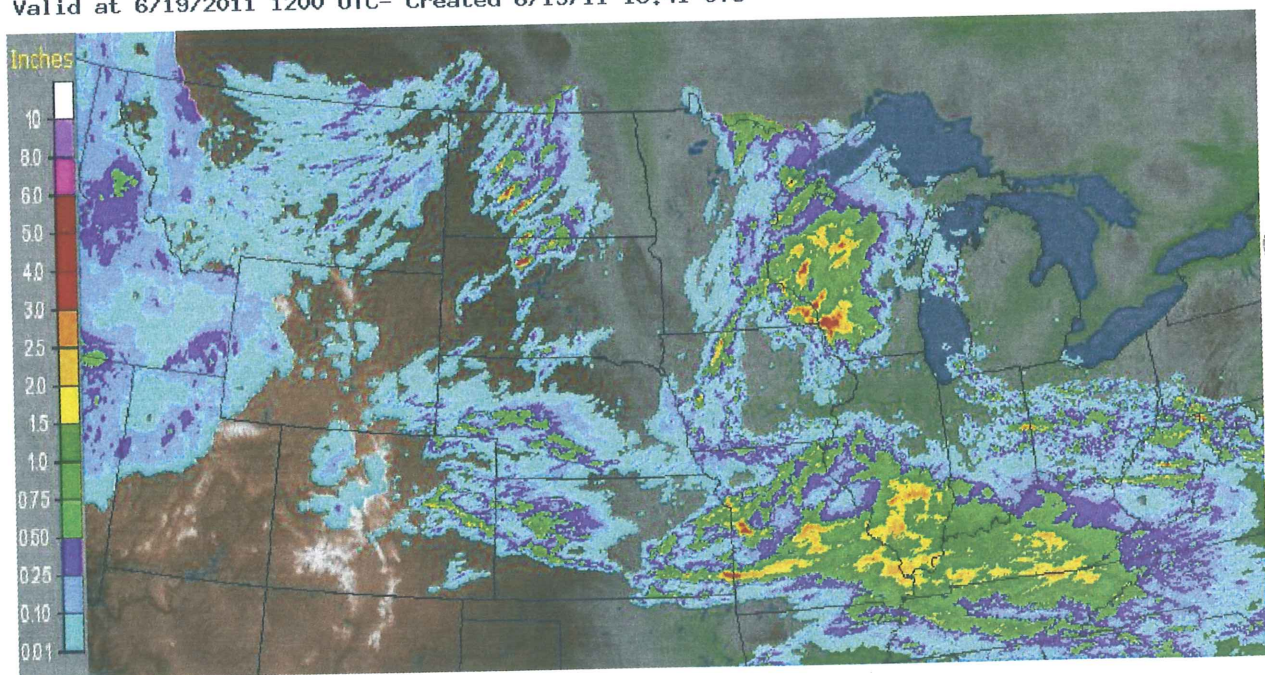


Figure 7. Rainfall on the Central Region of the United States for June 18, 2011.

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 11:45 AM
To: CE-UOC HQ02; DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; [REDACTED] NWK
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 - Update (UNCLASSIFIED)
Attachments: 550_overtop.jpg; 550overtop.pdf

Classification: UNCLASSIFIED
Caveats: NONE

All,

The levee sponsor along with the local, county, and State officials have determined that the amount of overtopping and severe erosion is too extensive to floodfight on L-550. Failure appears to be imminent as the erosion is occurring rapidly. The local, county and state officials are now concentrating their efforts on evacuation and road closures.

The photo attached was taken about 2 hours ago. Also a map is included of the area that was first overtopped this morning.

Thanks,
[REDACTED]

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
402-995-2448 Office
402-490-5099 Blackberry
[REDACTED]@usace.army.mil

-----Original Message-----

From: CENWO-EOC NWO
Sent: Sunday, June 19, 2011 10:48 AM
To: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Williamson, Eileen L NWO
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 10:48:16 AM
To: CE-UOC HQ02; DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; MRJIC; [REDACTED] NWK
Subject: RE: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED) Auto forwarded by a Rule

Classification: UNCLASSIFIED
Caveats: NONE

Update to Missouri River L-550 Overtop

As of 1000: The area is located 1/4 of a mile North of the Brownville Bridge, HWY 136 on the Missouri side. The current report is that the water is flowing over the levee by approximately 6" for a stretch of 300 yds. The levee sponsor, working with the County and State are working to get the State of MO air assets in place to drop sandbags in this area to stop the flow. The State of MO is currently quoting an ETA of 1500 of air asset arrival. USACE has large sandbags enroute to the location.

As of 1045: USACE personnel are flying it now and report there are many overtopping areas with material moving, would be very hard to bag the extensive lengths of these areas.

Areas of potential impact include the towns of Watson and Phelps City, MO.

Population totals: 361

Total buildings: 332

Total buildings - Residential: 317

Area protected: 63 square miles

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
402-995-2448 Office
402-490-5099 Blackberry
[REDACTED]@usace.army.mil

-----Original Message-----

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 10:08 AM
To: CE-UOC HQ02
Cc: [REDACTED] NWO
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

-----Original Message-----

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 7:46 AM
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; MRJIC; DLL-HQ-UOCInternal; CENWO-EOC NWO
Subject: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

All,

WHO: US Army Corps of Engineers, Omaha District
WHAT: Federal Levee Overtop - Missouri River PL 84-99 Federal Levee - L-550, Operated and Maintained by a local levee sponsor, built by USACE.
WHEN: 19 June 2011 at 0500

WHERE: Missouri River Levee Unit L-550, Sponsor reported overtopping occurring in several locations north (upstream) of Highway 136 in Atchison County, MO.

WHY: Water levels at the Brownsville gage increased approximately 2 feet in a 24 hour period from 0530 18 June to 0530 19 June. Officials from the State of Missouri and FEMA Region VII have been notified. Atchison County Emergency Management is recommending evacuations for all west of Interstate 29 in Atchison County, Missouri.

[REDACTED]
Natural Disaster Program Manager, Readiness Branch U.S. Army Corps of Engineers, Omaha District

1616 Capitol Ave, Ste 9000 (Attn: CENWO-OD-E) Omaha, NE 68102-9000

Phone: ([REDACTED])

Cell: ([REDACTED])

Fax: ([REDACTED])

[REDACTED]@usace.army.mil

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

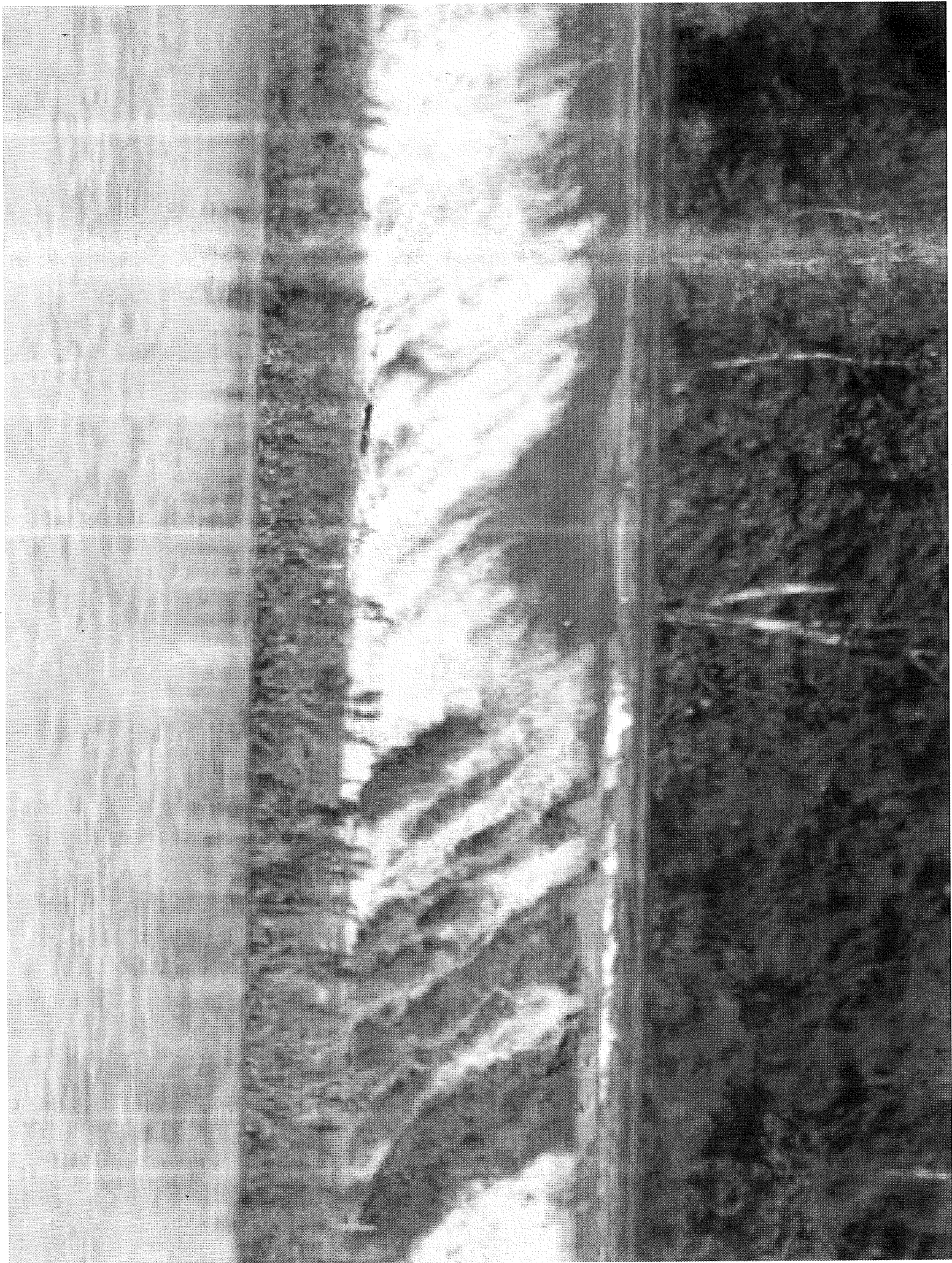
Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE





[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Sunday, June 19, 2011 11:38 AM
To: DLL-CENWD-PDR; [REDACTED] NWD02; [REDACTED] NWO
Subject: Fw: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

FYSA.

[REDACTED]
[REDACTED]
MRBWM Res Reg Team Lead
402.996.3870 (Office)
402.779.1444 (BB)

Message sent via my BlackBerry Wireless Device

----- Original Message -----

From: [REDACTED] NWO
To: CE-UOC HQ02; DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; MRJIC; [REDACTED] NWK
Sent: Sun Jun 19 08:48:16 2011
Subject: RE: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

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U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry

[REDACTED]@usace.army.mil

-----Original Message-----

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To: CE-UOC HQ02
Cc: [REDACTED] NWO
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

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[REDACTED]
Natural Disaster Program Manager, Readiness Branch U.S. Army Corps of Engineers, Omaha District
1616 Capitol Ave, Ste 9000 (Attn: CENWO-OD-E) Omaha, NE 68102-9000
Phone: (402) [REDACTED]
Cell: (402) [REDACTED]
Fax: (402) [REDACTED]
[REDACTED]@usace.army.mil

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Caveats: NONE

NWO

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U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[REDACTED]@usace.army.mil

-----Original Message-----

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 10:08 AM
To: CE-UOC HQ02
Cc: [REDACTED] NWO
Subject: FW: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

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Cc: CENWD-EOC NWD; MRJIC; DLL-HQ-UOCInternal; CENWO-EOC NWO
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[REDACTED]
Natural Disaster Program Manager, Readiness Branch U.S. Army Corps of Engineers, Omaha District
1616 Capitol Ave, Ste 9000 (Attn: CENWO-OD-E) Omaha, NE 68102-9000
Phone: ([REDACTED])
Cell: ([REDACTED])
Fax: ([REDACTED])
[\[REDACTED\]@usace.army.mil](mailto:[REDACTED]@usace.army.mil)

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: [REDACTED] NWD02
Sent: Sunday, June 19, 2011 9:30 AM
To: Love, Raymond E MAJ NWD; [REDACTED] NWD; [REDACTED] NWO
Cc: Farhat, Jody S NWD02
Subject: (UNCLASSIFIED)
Attachments: NWD Missouri Basin Update - 061911.pptx

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Basin Stages

19 June 2011



	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
A	Bismarck	16	18.8	150 kcfs 20.6	June 19	
B	Pierre	13	19.1	150 kcfs 18.7	June 7	
C	Yankton	20	25.0	150 kcfs n/a	June 14	
D	Sioux City	30	33.5	170 kcfs 35	June 15	44.28 (1952)
E	Decatur	35	38.3	175 kcfs 40	June 15	43.5 (1943)
F	Blair	26	31.8	175 kcfs 32	June 15	33.5 (1952)
G	Omaha	29	33.2	175 kcfs 34	June 16	40.2 (1952)
H	Nebraska City	18	26.2	200 kcfs 27	June 16	27.19 (1993)
I	Brownville	33	44.00	205 kcfs 43	June 16	44.3 (1993)
J	Rulo	17	25.2	210 kcfs 25.5	June 17	26.63 (2010)
K	St. Joseph	17	23.9	215 kcfs 27	June 17	32.07 (1993)
L	Atchison	22	26.5	215 kcfs 30	June 17	31.63 (1993)
M	Leavenworth	20	21.9	215 kcfs 27	June 17	35.34 (1993)

Missouri River Basin Stages

19 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
N	Kansas City	32	26.6	220 kcfs 30 350 kcfs 39	June 18	48.87 (1993)
O	Sibley	22	25.0	220 kcfs 28 350 kcfs 33	June 18	40.6 (1952)
P	Napoleon	17	na	220 kcfs 25 350 kcfs 29	June 18	28.86 (2007)
Q	Waverly	20	24.9	230 kcfs 27 370 kcfs 31	June 18	31.15 (1993)
R	Miami	18	22.9	235 kcfs 26 370 kcfs 30	June 19	32.6 (1993)
S	Glasgow	25	na	250 kcfs 32 410 kcfs 37	June 19	39.5 (1993)
T	Boonville	21	21.7	260 kcfs 27 420 kcfs 33	June 19	37.1 (1993)
U	Jefferson City	23	21.4	260 kcfs 27 430 kcfs 35	June 19	38.3 (1993)
V	Chamois	17	17.2	290 kcfs 24 450 kcfs 29	June 19	33.3 (1993)
W	Gasconade	22	23.4	300 kcfs 30 470 kcfs 35	June 19	39.6 (1993)
X	Hermann	21	21.5	300 kcfs 27 470 kcfs 33	June 20	36.97 (1993)
Y	Washington	20	18.0	300 kcfs 23 470 kcfs 32	June 20	35.4 (1993)
Z	St. Charles	25	24.6	300 kcfs 28 470 kcfs 37	June 20	40.04 (1993)

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 9:07 AM
To: [REDACTED] NWO; [REDACTED] NWO; DLL-CENWO-OD-GA; [REDACTED]
NWO; [REDACTED] NWD02; [REDACTED] HQ02; [REDACTED] NWO; Farhat, Jody S
NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; Schenk, Kathryn M NWO; [REDACTED] NWO;
[REDACTED] @ POD; [REDACTED] NWO
Subject: Today's Staff Notes (UNCLASSIFIED)
Attachments: 6-19 Garrison Flood Fight Daily Staff Notes.docx; Main Stem Regulation Forecast - Three-Week.htm

Classification: UNCLASSIFIED

Caveats: NONE

Attached are today's notes, along with the current 3-week forecast...

[REDACTED]
Acting Operations Project Manager
Garrison Project

Classification: UNCLASSIFIED

Caveats: NONE

**Garrison Flood Fight
Daily Staff Notes
Sunday, 19 June 2011**

Forecast/Flows/River Monitoring:

- Lake Sakakawea:
 - Current Reservoir Elevation: 1854.00. Yesterday's elevation: 1854.01
 - Current Tail water Elevation 1684.53. Yesterday's elevation 1684.50
 - Stilling Basin (a.k.a. Spillway Pond) elevation: 1687.4
 - Estimated Inflows today: 173,700 cfs. Inflows yesterday: 148,000 cfs.
 - Releases: 150,000 cfs.
 - Spillway gates 1 through 28 are open 2 feet.
 - Day water release distribution: Power Plant - 31,000 cfs, Regulating Tunnels - 58,000 cfs, Spillway - 61,000 cfs.
 - Night water release distribution: Power Plant - 16,000 cfs, Regulating Tunnels - 73,000 cfs, Spillway - 61,000 cfs.
 - We are shifting our releases between the regulatory tunnels and the power plant to provide load control for WAPA. Scheduled load and water release changes are being made at 0800 and 2000 hours.
- Fort Peck releases are 65,000 cfs and are scheduled to remain at that level through June 19th before going back down to 60,000 cfs.
- Missouri River Elevations:
 - Bismarck gage: Currently 18.72 feet. Yesterdays gage was 18.39 feet. Protection measures in Bismarck are to 21.6 feet with a forecasted crest of 20.6 feet.
 - Williston gage: The river gage as of yesterday afternoon was 30.04 feet. Gage was 30.13 feet on 17 June. Previous record stage: 28.0 feet.
- Current Snowpack: Snow pack data not updated for today...
 - Ft Peck - crested at 141% of normal peak; currently 70% of the normal peak remains.
 - Garrison - crested at 136% of peak; currently 78% of the normal peak remains.

Garrison Dam Surveillance:

- Surveillance: Team Leader, [REDACTED], cell: ([REDACTED]). Instrumentation: Team Leader [REDACTED], cell: ([REDACTED])
- Spillway: The level of the spillway stilling basin is slightly decreasing; currently at 1687.4 (almost 3 ft above tailrace). Yesterdays level was 1687.8.
- Spillway: Shortly before noon, a rooster tail developed on the spillway slab immediately downstream of Spillway Gate 24. The gate was closed to investigate. It was determined that a rubber seal was protruding from the articulation joint downstream of the gate. The spillway gate was reopened shortly after the inspection. The force of the water being released from the gate removed the seal from the joint. Seal on downstream edge of articulation slab was removed during previous spill repairs.

- Embankment: Downstream slopes, crest and toe are in good condition with no concerns at this time. Waterline metering manhole by powerplant entrance was pumped dry and has remained dry since yesterday. Manhole discharge in north abutment slope appears to be less than anticipated, even though piezometer readings continue to rise. Slope is stable but is being monitored closely.
- Powerhouse: Powerhouse inspected today with no significant issues identified.
- East Abutment: All seeps (1 through 4) have enlarged in extent, but discharge remains clear. Project received couple more isolated rain events. Once we have period of a day or two of dry weather, these areas will be mapped again and plotted.
- Tailrace: Releases from the regulatory tunnels were increased from 60,000 to 75,000 cfs at 2000 hours once again. Splashing and rolling waves dramatically increased but the rebuilt sandbag diversion is holding up and minimizing headcuts for time being.
- Surveillance Plans: A plan should be developed to establish full time monitoring requirements at critical surcharge openings or elevations to assure gates will not overtop during wind wave setups.
- Surcharge of Reservoir: ED-DF (Lyle Petersen) confirmed that wave overtopping the spillway tainter gates would be acceptable in partially open position. John Bertino is to make a recommendation on desired freeboard.

Snake Creek Embankment/ Lake Audubon:

- Surveillance: Plan to assess the embankment today.
- Lake Audubon has been filled to elevation 1849.5 to utilize additional storage. Currently we do not plan to increase that elevation.

Williston Levee:

- POC's [REDACTED], cell: (804) [REDACTED] / [REDACTED]
- The inspection team found 5-6 new pin boils yesterday. Crews re-worked (sandbagged) the boil as they noticed slight changes with the truck traffic from the roadway project. They however would not conclude that the changes in the boil can be directly related to truck traffic.
- The roadway improvement project is complete at the west end of the levee.
- Security was a problem again today. Many people were coming down wanting to get in and see the water. A dirt bike went past 2 no trespassing signs on the water treatment plant road and spun around in the Williston Resource Office parking lot. The rider did not have insurance on the vehicle and was arrested by Williston Police. Natural Resources staff will follow up with the individual and issue a citation for trespassing.

Natural Resources:

- POC's [REDACTED], cell: [REDACTED]
- Very busy weekend. It was estimated that over 5,000 people stopped to view the Spillway yesterday. Law enforcement is doing a good job directing traffic and people.

- Mike Key and Brent Cossette, from the District Office, have arrived and are assisting the Garrison Project for the next couple weeks to provide our personnel some reprieve. The assistance is much appreciated!

Outside Maintenance:

- Will coordinate adding rock to the lower end of the tailrace riprap on both East and West banks, as the current and fluctuating tailrace elevations are back cutting the riprap. Current conditions will not allow access on the East bank as it is too muddy. Work will be pursued as soon as conditions permit.
- The sandbag berm and the scour hole in the west side of Tunnel 8 were repaired yesterday. Will continue to monitor this area.
- Temporary water line: If a leak is noted, notify your supervisor, Chuck Phelps, or I ASAP. Also notify City of Riverdale, "Clay" at (701) 471-6433 or Charles Sorensen ext. 232, or home ([REDACTED]). Shutoff valves located on the line. A drawing showing the locations of these valves is posted in the Outside Maintenance shop. A valve key to close the valves is located immediately inside the front door of the maintenance building.

Power Plant:

- Going back to four units generating today and backing off again this evening to meet WAPA load demands. Changes will be made at 8:00 am and 8:00 pm. Load changes are scheduled to be made through the weekend to assist WAPA with anticipated load demands.
- Drawings for monitoring and/or automation of the regulating tunnel gates have been sent to Omaha for review/concurrence and to ensure compliance with EC 1110-2-6071, which restricts remote operations for water control features that pose life safety risk. Concerns remain that automation will further exacerbate the desire to operate these gates frequently as part of power load control for WAPA. I still want an Engineering opinion regarding whether these gates are designed for such use?

Weather/Safety:

<p>Today: A 50 percent chance of showers and thunderstorms, mainly after 1pm. Some of the storms could produce heavy rainfall. Partly sunny, with a high near 76. Southeast wind between 13 and 18 mph, with gusts as high as 25 mph.</p>	<p>Tonight: Showers and thunderstorms likely. Some of the storms could produce heavy rainfall. Cloudy, with a low around 61. East wind 14 to 17 mph decreasing to between 6 and 9 mph. Winds could gust as high as 24 mph. Chance of precipitation is 70%. New rainfall amounts between three quarters and one inch possible.</p>	<p>Monday: A 50 percent chance of showers and thunderstorms. Some of the storms could produce heavy rainfall. Cloudy, with a high near 63. East wind between 14 and 16 mph, with gusts as high as 23 mph. New rainfall amounts between a half and three quarters of an inch possible.</p>
--	--	--

- Mike Morris and Charles Sorensen have volunteered to work on evacuation plans. I still need to coordinate with them on development of these plans.

Needed Resources:

- Overview maps to be utilized for dam safety surveillance are to be printed in Omaha and Fed-exed to the project.
- Currently working with ACE-IT and looking into upgrading our radios so that we can utilize them effectively for local communication. Cell phone coverage is spotty in several locations. Signal booster has been ordered to improve cell phone reception.
- Larry Janis is working on the contract with the Conservancy District for rip rap repairs. Hope to have a contract awarded today. Contract covers next 8 weeks with labor and equipment needs assumed for 3 days per week. OD-GA Tech Support will need to track actual days used on Contract.
- Dale Evenson is preparing the contract specifications for crane services necessary to place stoplogs for the inspection of the regulatory tunnels. Specifications should be completed today.

Any resource needs, safety issues, or emergencies should be directed to your team leaders/POC immediately. If they cannot be reached contact [REDACTED]

[REDACTED] / Home: [REDACTED]).

OPM Notes:

- [REDACTED] is on a much needed and much deserved vacation. [REDACTED] will return to ND on Sunday. [REDACTED] will be Acting OPM. His cell number is ([REDACTED]) [REDACTED]
- Everyone needs to be watching for large trees/debris that is headed for our spillway. If large debris is noted, Outside Maintenance should be notified ASAP.
- Request has been made to USGS to survey the Spillway and Tailrace Channels. Survey is scheduled to be done on 22 June.
- Many folks are working long hours and/or late shifts. Please watch out for each other and ensure that safety procedures are followed!

This regulation forecast was made using computed reservoir inflows based on 5-days of forecast precipitation and mountain snowmelt runoff. The regulation forecast is subject to change daily as actual events occur.

* Indicates release changes from previous forecast

		FTPK				GARR				OAHE				REGULATION FORECAST 06/18/11				BEND				FTRA			
		24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE	24EL	24ID	24OD	24
18		2252.2	60.0	65.0	5.14	1853.9	175.8	150.0	9.27	1618.6	161.2	155.0	13.89	1420.0	155.0	155.0	8.40	1364.6	161.2	143.0	9				
19		2252.1	54.0	65.0	5.13	1854.0	173.7	150.0	9.27	1618.7	165.1	160.0	13.90	1420.0	160.0	160.0	8.33	1365.1	164.2	143.0	9				
20	M	2252.1	53.0	60.0	5.13	1854.1	172.5	150.0	9.28	1618.7	159.9	160.0	13.90	1420.0	160.0	160.0	8.27	1365.5	163.8	143.0	9				
21	T	2252.0	51.0	60.0	5.13	1854.2	172.0	150.0	9.28	1618.7	161.0	160.0	13.90	1420.0	160.0	160.0	8.21	1365.9	163.3	145.0*	9				
22	W	2251.9	49.0	60.0	5.13	1854.3	175.6	150.0	9.29	1618.7	160.0	160.0	13.90	1420.0	160.0	160.0	8.16	1366.2	162.8	147.0*	9				
23	T	2251.8	47.0	60.0	5.13	1854.5	171.8	150.0	9.30	1618.7	159.0	160.0	13.90	1420.0	160.0	160.0	8.11	1366.5	162.4	148.0	9				
24	F	2251.7	46.0	60.0	5.12	1854.5	168.6	150.0	9.30	1618.6	158.0	160.0	13.89	1420.0	160.0	160.0	8.07	1366.8	162.3	148.0	9				
25		2251.6	47.0	60.0	5.12	1854.6	161.0	150.0	9.30	1618.6	157.5	160.0	13.89	1420.0	160.0	160.0	8.02	1367.1	162.2	148.0	9				
26		2251.5	48.0	60.0	5.12	1854.6	152.0	150.0	9.31	1618.6	157.5	160.0	13.89	1420.0	160.0	160.0	7.98	1367.4	162.1	148.0	9				
27	M	2251.4	52.0	60.0	5.12	1854.6	154.0	150.0	9.31	1618.6	157.5	160.0	13.89	1420.0	160.0	160.0	7.93	1367.7	161.9	148.0	9				
28	T	2251.4	56.0	60.0	5.12	1854.7	164.0	150.0	9.31	1618.6	157.5	160.0	13.89	1420.0	160.0	160.0	7.89	1367.9	161.7	148.0	9				
29	W	2251.4	62.0	60.0	5.12	1854.8	170.0	150.0	9.31	1618.6	157.5	160.0	13.89	1420.0	160.0	160.0	7.85	1368.2	161.5	148.0	9				
30	T	2251.4	70.0	60.0	5.12	1854.9	175.0	150.0	9.32	1618.5	157.5	160.0	13.89	1420.0	160.0	160.0	7.81	1368.5	161.4	148.0	9				
1	F	2251.5	74.0	60.0	5.12	1855.0	174.0	150.0	9.33	1618.5	156.0	160.0	13.89	1420.0	160.0	160.0	7.76	1368.8	161.2	148.0	9				
2		2251.7	74.0	60.0	5.12	1855.2	173.0	150.0	9.33	1618.5	155.0	160.0	13.88	1420.0	160.0	160.0	7.72	1369.0	161.0	148.0	9				
3		2251.7	65.0	60.0	5.12	1855.3	172.0	150.0	9.34	1618.4	155.0	160.0	13.88	1420.0	160.0	160.0	7.68	1369.3	160.9	148.0	9				
4	M	2251.7	60.0	60.0	5.12	1855.4	171.0	150.0	9.34	1618.4	155.0	160.0	13.88	1420.0	160.0	160.0	7.64	1369.5	160.7	148.0	9				
5	T	2251.7	59.0	60.0	5.12	1855.5	170.0	150.0	9.35	1618.4	154.0	160.0	13.87	1420.0	160.0	160.0	7.60	1369.8	160.5	148.0	9				
6	W	2251.6	54.0	60.0	5.12	1855.5	169.0	150.0	9.35	1618.3	154.0	160.0	13.87	1420.0	160.0	160.0	7.57	1370.0	160.4	148.0	9				
7	T	2251.5	50.0	60.0	5.12	1855.6	166.0	150.0	9.36	1618.3	153.0	160.0	13.87	1420.0	160.0	160.0	7.53	1370.3	160.2	148.0	9				
8	F	2251.4	49.0	60.0	5.12	1855.7	164.0	150.0	9.36	1618.2	153.0	160.0	13.86	1420.0	160.0	160.0	7.49	1370.5	160.2	148.0	9				
9		2251.3	49.0	60.0	5.11	1855.7	162.0	150.0	9.36	1618.2	152.0	160.0	13.86	1420.0	160.0	160.0	7.45	1370.8	160.2	148.0	9				
10		2251.2	48.0	60.0	5.11	1855.8	160.0	150.0	9.36	1618.1	152.0	160.0	13.86	1420.0	160.0	160.0	7.41	1371.0	160.2	148.0	9				
11	M	2251.1	47.0	60.0	5.11	1855.8	158.0	150.0	9.37	1618.1	152.0	160.0	13.85	1420.0	160.0	160.0	7.38	1371.3	160.2	148.0	9				
12	T	2251.0	46.0	60.0	5.11	1855.8	156.0	150.0	9.37	1618.0	152.0	160.0	13.85	1420.0	160.0	160.0	7.34	1371.5	160.2	148.0	9				
13	W	2250.8	45.0	60.0	5.10	1855.8	154.0	150.0	9.37	1618.0	152.0	160.0	13.85	1420.0	160.0	160.0	7.30	1371.7	160.2	148.0	9				
14	T	2250.7	44.0	60.0	5.10	1855.8	152.0	150.0	9.37	1617.9	152.0	160.0	13.84	1420.0	160.0	160.0	7.26	1372.0	160.2	148.0	9				
15	F	2250.5	38.0	60.0	5.10	1855.8	150.0	150.0	9.37	1617.9	152.0	160.0	13.84	1420.0	160.0	160.0	7.23	1372.2	160.2	148.0	9				

Project:

24EL Midnight Elevation (feet above mean sea level)
 24ID Daily Average Inflow (kcfs)
 24OD Daily Average Release (kcfs)
 24GE Daily Power Generation (MWh)

System:

GE Daily Power Generation (MWh)
 SG Midnight Storage (AF)
 DSG Daily Storage Change (AF)

Units:

kcfs thousand cubic feet per second
 MWh megawatt hour
 AF acre-feet

Pagemaster: Water Management; CENWD-PDR;

Internet E-Mail Address: Missouri.Water.Management@nwd02.usace.army.mil

NWO

From: [REDACTED] NWD02
Sent: Sunday, June 19, 2011 8:55 AM
To: [REDACTED] NWD02; CENWO-EOC NWO; Williamson, Eileen L NWO; [REDACTED]
[REDACTED] MVR; [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S
NWD02; [REDACTED] NWO
Subject: RE: Mainstem data for NWO sitrep 6/19/11 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Notes for data below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

Fort Peck Dam (MT)

6/18 Pool Elev: 2252.1 ft-msl

24-hr change: -0.1'

6/18 Ave Inflow: 50,000 cfs

6/18 Ave Release: 65,500 cfs

6/19 Scheduled Release: 65,000 cfs

Garrison Dam (ND)

6/18 Pool Elev: 1853.9 ft-msl

24-hr change: 0.1'

6/18 Ave Inflow: 169,000 cfs

6/18 Ave Release: 150,000 cfs

6/19 Scheduled Release: 150,000 cfs

Oahe Dam (SD)

6/18 Pool Elev: 1618.5 ft-msl

24-hr change: -0.2'

6/18 Ave Inflow: 156,000 cfs

6/18 Ave Release: 153,600 cfs

6/19 Scheduled Release: 160,000 cfs

Big Bend Dam (SD)

6/18 Pool Elev: 1419.5 ft-msl

24-hr change: -0.2'

6/18 Ave Inflow: 150,000 cfs

6/18 Ave Release: 153,000 cfs

6/19 Scheduled Release: 160,000 cfs

Fort Randall Dam (SD)

6/18 Pool Elev: 1364.5 ft-msl

24-hr change: 0.2'

6/18 Ave Inflow: 158,000 cfs

6/18 Ave Release: 143,600 cfs

6/19 Scheduled Release: 143,000 cfs

Gavins Point Dam (NE-SD)

6/18 Pool Elev: 1207.7 ft-msl

24-hr change: -0.1'

6/18 Ave Inflow: 149,000 cfs

6/18 Ave Release: 150,100 cfs

6/19 Scheduled Release: 150,000 cfs

[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Sunday, June 19, 2011 8:28 AM
To: DLL-CENWD-PDR
Subject: Fw: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

FYSA.

[REDACTED]

[REDACTED]

MRBWM Res Reg Team Lead
402.996.3870 (Office)
402.779.1444 (BB)

Message sent via my BlackBerry Wireless Device

----- Original Message -----

From: [REDACTED] NWO
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; MRJIC; DLL-HQ-UOCInternal; CENWO-EOC NWO
Sent: Sun Jun 19 05:46:05 2011
Subject: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

All,

WHO: US Army Corps of Engineers, Omaha District
WHAT: Federal Levee Overtop - Missouri River PL 84-99 Federal Levee - L-550, Operated and Maintained by a local levee sponsor, built by USACE.
WHEN: 19 June 2011 at 0500
WHERE: Missouri River Levee Unit L-550, Sponsor reported overtopping occurring in several locations north (upstream) of Highway 136 in Atchison County, MO.
WHY: Water levels at the Brownsville gage increased approximately 2 feet in a 24 hour period from 0530 18 June to 0530 19 June. Officials from the State of Missouri and FEMA Region VII have been notified. Atchison County Emergency Management is recommending evacuations for all west of Interstate 29 in Atchison County, Missouri.

[REDACTED]
Natural Disaster Program Manager, Readiness Branch U.S. Army Corps of Engineers, Omaha District
1616 Capitol Ave, Ste 9000 (Attn: CENWO-OD-E) Omaha, NE 68102-9000
Phone: ([REDACTED])
Cell: ([REDACTED])
Fax: ([REDACTED])
[REDACTED]@usace.army.mil

Classification: UNCLASSIFIED

Caveats: NONE

From: [REDACTED] NWD
Sent: Sunday, June 19, 2011 8:08 AM
To: McMahon, John R BG NWD; Tipton, Robert A Col NWD; [REDACTED] P NWD; Miles,
Steven R COL NWP; Ruch, Robert J COL NWO; Wright, Anthony COL NWS; Hofmann,
Anthony J COL NWK; Caldwell, David A LTC NWW; Acheson, William E LTC NWS; Jordano,
James J LTC NWO; Capps, Stephan A LTC NWP; Evers, Jason A MAJ NWK; Hains, Decker
B LTC NWW; Cenwk-EOC NWK; CENWO-EOC NWO; CENWS-EOC NWS; CENWW-EOC
NWW; CENWP-EOC NWP; [REDACTED] NWD; [REDACTED] NWD
Cc: [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD;
[REDACTED] A NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD;
[REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED]
N NWD; [REDACTED] ULA; Farhat, Jody S NWD02; [REDACTED] NWD; [REDACTED] NWD;
NWD; Love, Raymond E MAJ NWD; Mahn, Richard A Cpt NWD; [REDACTED] NWD; [REDACTED]
[REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED]
[REDACTED]; [REDACTED] NWP; [REDACTED] ULA@ POD; [REDACTED] NWD; Rychlik,
Dean L; McNeil, Rye A SSG CONTRACTOR @ NWD; [REDACTED] SAW; [REDACTED]
NWD

Subject: FEMA National Situation Report for June 19, 2011 (UNCLASSIFIED)
Attachments: 2011june19fema_natl_sitrep.pdf

Sir,

The operational reports and summary related to flooding and our support to FEMA will be issued in the RCO Evening Report. Only items reported in the Daily FEMA National SITREP are presented.

From FEMA Report (attached):

Missouri River Basin Flooding Summary:

An active weather pattern is expected to continue across the region over the next couple of days. A weak front the area will combine with an upper level disturbance to produce scattered strong to isolated severe weather this afternoon and evening. Additional severe weather will be possible on Sunday night through Monday night. Most common threats with these storms are large hail and damaging winds; however, an isolated tornado cannot be ruled out. Significant rainfall can also be expected across Central and Eastern portions of Missouri.

Major reservoirs along the Missouri River Basin are at or nearing peak reservoir releases. Releases are expected to continue well into August.

Levee construction for six cities is basically completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System Reservoirs. USACE has been working with the cities of Bismarck/Mandan, ND; Pierre/Ft. Pierre, SD; Dakota Dunes, SD; and South Sioux City, NE to construct levees to limit flood impacts.

Floodplain evacuations have been ongoing for many lower-lying areas along the Lower Missouri River.

The US Coast Guard has closed the Missouri River to all vessels from Mile Marker 450 near St. Joseph, to Mile Marker 811 near Gavins Point Dam in Yankton, SD.

Missouri has 6 Red Cross shelters on standby for flooding in Atchison, Holt, Osage, and Buchanan Counties. Iowa has 2 open Red Cross shelters; 1 in Fremont County and 1 in Harrison

County, with a total population of 3 occupants. Nebraska has 3 open shelters, with a population total of 3 occupants.

Significant National Weather:

Midwest: Locally heavy rain and strong to severe thunderstorms continues from the Plains into the Ohio Valley. Up to 2 inches are expected in from the Middle Mississippi Valley to the Southern Appalachians leading to flash flooding conditions. (eastern South Dakota; eastern Nebraska; eastern Kansas; Iowa; and Missouri).

West: Periods of showers and afternoon thunderstorms continue, along with high elevation snow showers, over parts of the Northern Intermountain West and the Northern Rockies through Monday morning.

v/r

██████████

Classification: UNCLASSIFIED

Caveats: NONE



FEMA

National Situation Report

As of 5:30 a.m. (EDT) Sunday, June 19, 2011

This information is provided as a public service. Information presented is considered public information and may be distributed or copied. Use of appropriate byline/photo/image credits is requested. Published daily by the FEMA National Watch Center (NWC). Available on the internet at: <http://www.fema.gov/emergency/reports/index.shtm>. For questions or comments, contact the NWC (staffed 24 hours a day, 7 days a week) at 202-646-2828 or fema-nwc@dhs.gov.

Significant National Weather West

Periods of showers and afternoon thunderstorms continue, along with high elevation snow showers, over parts of the Northern Intermountain West and the Northern Rockies through Monday morning. Hot weather continues with temperatures into upper 90s to low 100s over from the Southwest into the Southern Plains by this afternoon. Gusts up to 55 mph are possible in some areas of the Southwest into the western Southern Plains. Red Flag Conditions are anticipated over the Southwest into the Southern Plains.

Midwest

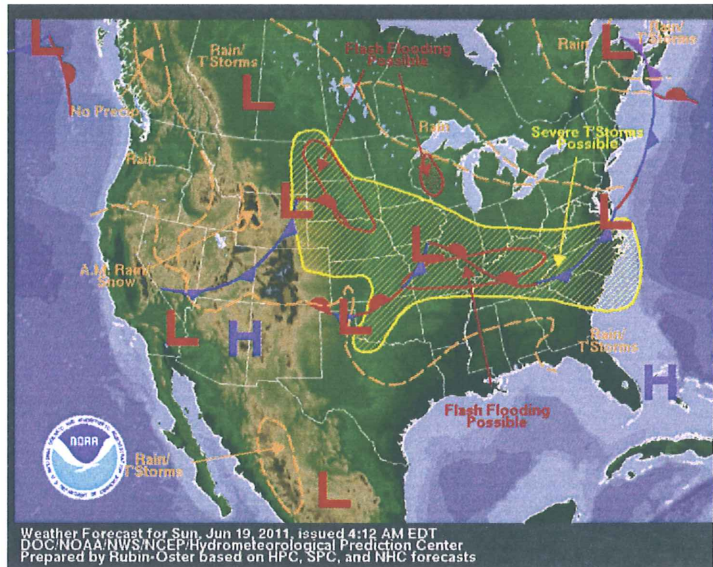
Locally heavy rain and strong to severe thunderstorms continues from the Plains into the Ohio Valley. Up to 2 inches are expected in from the Middle Mississippi Valley to the Southern Appalachians leading to flash flooding conditions. Moderate to slight chance of severe thunderstorms are forecasted over the Mississippi Valley to the Mid-Atlantic Region today.

South

Hot and humid weather continues the region with temperatures in the 90s. Scattered thunderstorms are likely over the Southeast.

Northeast

Scattered thunderstorms are likely over the Mid-Atlantic during the afternoon and evening hours.
(NOAA, NWS and various media sources)



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Federal and State Response

FEMA Region VII

The Regional Response Coordination Center (RRCC) is activated at Level 3 (Monitoring). Regional Watch Center (RWC) is operational 24/7.

The State Liaison teams have been deployed to Kansas, Iowa, and Missouri. An enhanced State Liaison Team is located at the State Emergency Operations Center (SEOC) in Nebraska.

Region VII LNOs are deployed to Kansas, Missouri and Iowa.

The Iowa SEOC is activated at Level II (limited staff in the EOC).

The Kansas EOC is activated at a Watch Level.

The Nebraska SEOC is activated at Level III (Full Activation – Mon-Fri; Duty Officer only on Sat/Sun).

The Missouri SEOC is activated at Level II (Partial Activation).

FEMA Region VIII

The RRCC is at Level III.

Regional IMAT teams are deployed to Montana, South Dakota, and North Dakota.

Two LNOs are deployed to Wyoming.

The South Dakota SEOC is activated at Level 1 (Full Activation). Montana, North Dakota, Wyoming and Utah SEOCs are partially activated. The Colorado SEOC is not activated.

National Fire Activity

Saturday, June 18, 2011:

National Preparedness Level: 3

Initial attack activity: Moderate (230 new fires)

New Large Fires: 5

Large Fires Contained: 5

Uncontained Large Fires: 34

Type 1 IMT Committed: 6

Type 2 IMT Committed: 9

States affected: AZ, NM, GA, NC, FL, OK, UT, TX, MS, AK & CO. (NIFC)

Wildfires

Arizona and New Mexico

Wallow Fire – FEMA 2915-FM-AZ (Apache, Navajo, Graham & Greenlee Counties); FEMA-2917-FM-NM (Catron County)

The fire has consumed 500,409 acres (increased by 5,393 acres) and is 44% contained.

Three Type 1 IMTs remain assigned to the fire.

Approximately 2,714 homes, 473 commercial properties, 1,216 outbuildings are threatened

32 homes, 4 commercial properties and 36 outbuildings were destroyed.

Five homes and 1 outbuilding have been damaged.



11 injuries have been reported.

Fire is reported to have jumped it's containment lines and is burning towards Luna, NM (Catron County), six miles from the Arizona border.

Evacuations remain in effect in Sunrise, Greer, and Blue River, AZ. A precautionary evacuation is in effect for Luna, NM.

A pre-evacuation alert remain in effect in Apache County, AZ for Greens Peak, Hidden Meadows Lodge and the surrounding areas.

Multiple highways and road closures in the fire area.

Monument Fire – FEMA-2919-FM-AZ (Cochise County, AZ)

Located within 5 miles of Sierra Vista (Pop. 3,700).

The fire has consumed 20,956 acres (increased by 2,376 acres), 27% containment.

Approximately 95 homes and 25 outbuildings are threatened; 50 residences have been damaged or destroyed; 2 outbuildings have been destroyed.

Evacuations: No update available.

3 shelters are open with no occupants.

Horseshoe 2 Fire – FEMA-2907-FM-AZ (Cochise County, NM)

The fire has consumed 210,311 acres (increase of 3,997 acres) and is 75% contained (increase of 10%); full containment expected June 22.

Nine residences and 14 structures have been damaged or destroyed.

Evacuations: No update available.

Track Fire - FEMA-2918-FM-NM (Colfax County, NM)

The fire has consumed 27,140 acres with 45% containment (increase of 20%); full containment is expected June 27.

Seven structures have been destroyed and 300 are threatened.

No updates available on evacuations.

Two injuries were reported

Alaska

East Volkmar Fire

The East Volkmar Fire is located approximately 25 miles east-northeast of Delta Junction and has consumed 58,050 acres with 28% containment (increase of 2%).

Hasting Fire

The Hastings Fire is located on State land burning approximately 15 miles Northwest of Fairbanks.

The fire has consumed 22,819 acres with 41% containment; expected containment unknown. A

Temporary Flight Restriction (TFR) is still in place for pilots operating in the Fairbanks in the airspace surrounding the Hastings Fire.

Colorado

Duckett Fire – FEMA-2923-FM-CO (Westcliffe, CO)

The Duckett Fire has consumed 4,348 acres (increase of 465 acres) and is 30% contained (increase of 20%). Several structures are threatened; 200 structures remain within 2 miles of the fire border.

Evacuations remain in effect for the Eagle Peak Subdivision, Rainbow Trail Lutheran Camp, County Rd 192, Brush Creek subdivision, Maytag Ranch and other scattered structures.

A Type II IMT is assigned to this fire.

Georgia

Honey Prairie Complex Fires – FEMA-2920-FM-GA (Racepond, Honey Prairie, Paxton Road and Durdin Prairie Fires)

Fires are burning near the Okefenokee National Wildlife Refuge, 5 mi NE of Fargo, GA.

The fire has consumed 231,018 acres (increase of 34,649 acres) with 54% or less percent containment.

Sweat Farm Again Fire – FEMA-2921-FM-GA

Approximately 5,000 acres are burned, with 30% containment. Full containment expected June 25, 2011. Evacuations and damage updates are not available.

Federal and State Response

FEMA Region VI

The RRCC is not activated. Region VI LNO is available to deploy, if needed.

FEMA Region IX

The RRCC is not activated.

A Region IX IMAT (Type III): 2 Available

Region IX personnel are deployed to the AZ SEOC (3 LNOs and 1 GIS Specialist), and the Southwest Coordination Center (SWCC) (1 LNO).

Two Regional IMATs are available for deployment, if necessary, to support fire activity.

The Arizona State EOC fully activated

Fire Management Assistance Grant (FMAG)

Countyline Fire

An FMAG was approved on June 18, 2011 for the Countyline Fire in Ellis County, TX. At the time of the FMAG approval, the fire had burned 100 acres. 560 persons were evacuated and 200 homes threatened. 1 home had been destroyed and others damaged.

Powerline Fire

An FMAG was approved on June 18, 2011 for the Powerline Fire in Jasper County, TX. At the time of the FMAG approval, the fire had burned 1,000 acres and threatened the Twin Dikes, Piney Point, Peach Tree, and Rayburn Subdivisions in Jasper County, TX. 1,500 residents have been evacuated with 500 homes threatened. 4 non-primary homes have been destroyed. The fire is within ½ mile of 200 homes.

Earthquake Activity

No significant activity. (USGS)

Tropical Activity

Atlantic / Caribbean / Gulf of Mexico

No activity expected within the next 48 hours.

Eastern / Central Pacific

Area 1

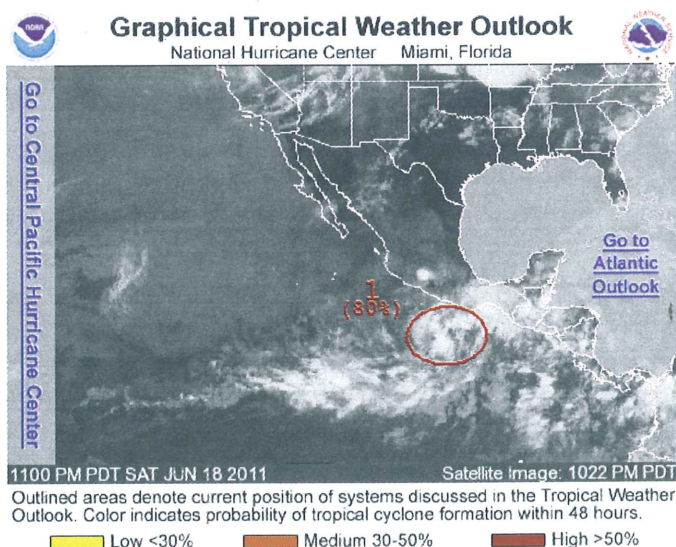
Recent satellite data indicate the large low pressure system centered about 300 miles south-southeast of Acapulco has continued to become better defined. Although thunderstorm activity has changed little over the past several hours, environmental conditions are expected to remain somewhat favorable for a tropical depression to form as early as Sunday evening. There is a high chance, 80 percent, of this system becoming a tropical cyclone during the next 48 hours as it moves westward to west-northwestward near 10 mph. Interests along the southwestern coast of Mexico should monitor the progress of this large disturbance over the next few days.

Western / South Pacific:

No activity affecting U.S. interests. (NOAA, NWS, NHC, CPHC JTWC)

Declaration Activity

On June 18, 2011, an emergency declaration, FEMA-3323-EM, was approved for the State of Nebraska due to flooding that occurred June 17, 2011. FEMA is authorized to provide emergency protective measures (Category B), limited to direct Federal assistance, under the Public Assistance program at 75% Federal Funding. Assistance provided for Boyd, Burt, Cass, Cedar, Dakota, Dixon,



Douglas, Garden, Knox, Lincoln, Morrill, Nemaha, Otoe, Richardson, Sarpy, Scotts Bluff, Thurston and Washington Counties. Additional designations may be made at a later date if requested by the State and warranted by the results of further evaluation. The FCO is Michael L. Parker of the National FCO Program.

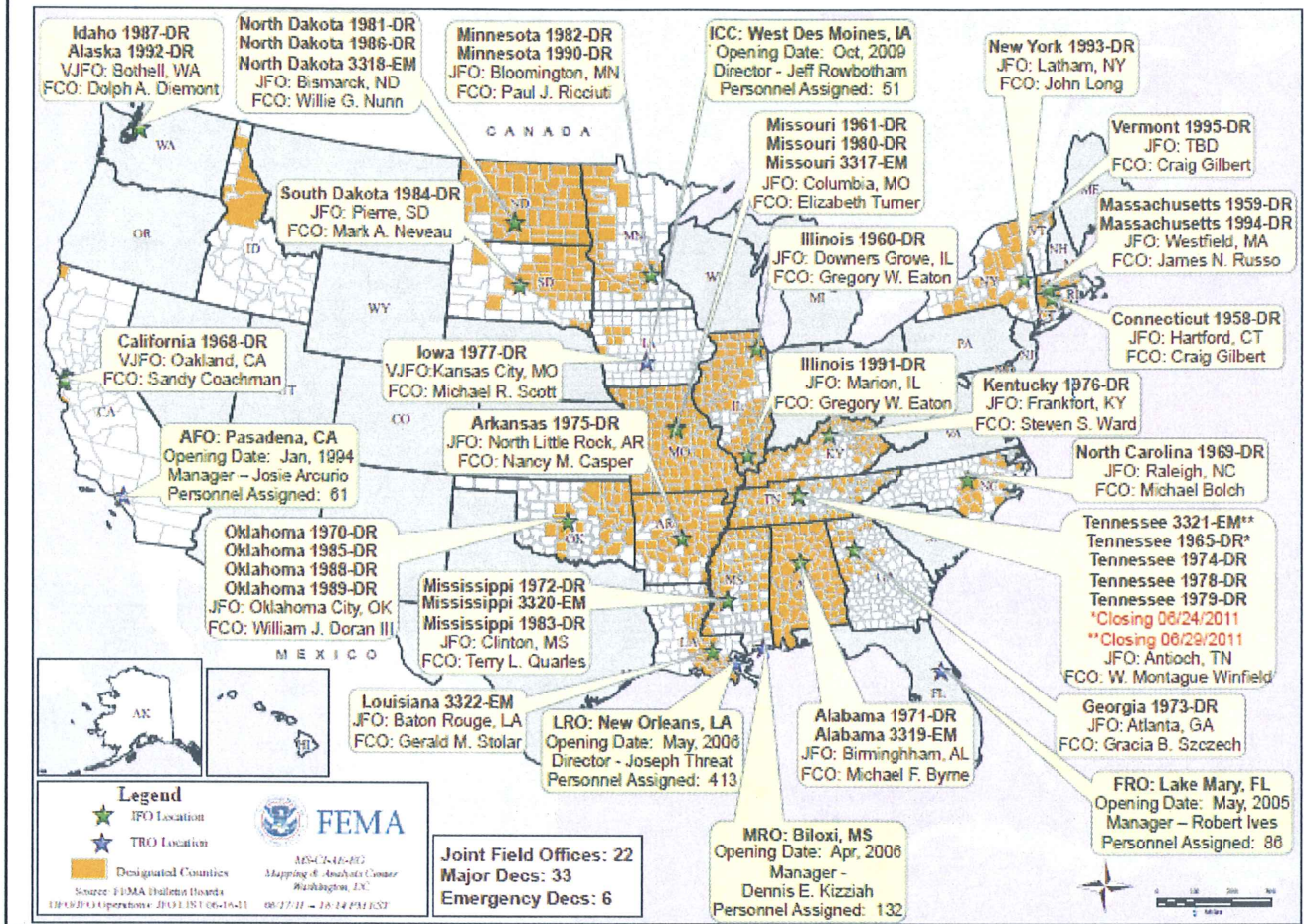
Joint Preliminary Damage Assessment Activity							
				Number of Counties/Tribes			(Estimated) Start/End Date
Region	State	Event	IA/ PA	Requested	Ongoing	Complete	
II	NY	Spring Flooding 4/26	IA	4	4	0	Began 6/14 End TBD
			PA	8	6	2	
IV	MS	Severe Weather 5/3	PA	14	9	5	Began 6/10 End TBD
V	MI	Severe Storms 5/29	IA	1	0	0	Began 6/17 End TBD
			PA	1		0	
VII	KS	Severe Storms, Tornadoes & Flooding 5/19	PA	29	0	0	Begin 6/20 End TBD
VII	IA	Flooding 5/25	PA	6	0	0	Began 6/16 End TBD
VIII	MT	Flooding	IA	14 counties; 1 Tribe	0	0	Begin 6/21 End 6/25
VIII	ND	Flooding	IA	4 counties	4	0	Began 6/18 End 6/20
VIII	WY	Flooding	TBD	TBD	0	0	Begin Week of 6/20

Disaster Activity		
Declaration/ Amendment Number	Effective Date	Amendment/Action
FEMA-3323-EM-NE	June 18, 2011	DFA (Cat B) for 18 counties.

On-Call and Deployed Teams		
Teams	Status	Location
National IMAT Red	Activated	Deployed to MS
National IMAT White	Not Activated	
National IMAT Blue	Activated	Deployed to AL
Region I IMAT	Activated	Deployed to MA
Region II IMAT	Not Activated	
Region III IMAT	Activated	Type II deployed to KY
Region IV IMAT	Activated	Type II deployed to TN and AL
Region V IMAT	Not Activated	
Region VI IMAT	Activated	Type II supporting 1975-DR-AR Type III Supporting 1971-DR-TX Type III deployed to OK
Region VII IMAT	Activated	Type II 1980-DR-MO Type II deployed to NE
Region VIII IMAT	Activated	Type III supporting DR-1984-SD Type III supporting DR-1981/1986 ND Type II deployed to MT Type III supporting SEOC in WY
Region IX IMAT	Not Activated	
Region X IMAT	Not Activated	
Other FEMA National Teams		
Hurricane Liaison Team	Activated	
NRCC	Not Activated	
National Watch Center	24/7	
DEST	Not Activated	

Activation Levels		
Region	RRCC	Watch
Region I	Watch/Steady State	Maynard MOC (24/7)
Region II	Watch/Steady State	24/7
Region III	Watch/Steady State	24/7
Region IV	Watch/Steady State	24/7
Region V	Watch/Steady State	24/7
Region VI	Watch/Steady State	Denton MOC (24/7)
Region VII	Level III	24/7
Region VIII	Level III	Denver MOC (24/7)
Region IX	Watch/Steady State	24/7
Region X	Watch/Steady State	Bothell MOC (24/7)

Open Field Offices & Designated Counties as of 06/19/2011



NWO

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 7:46 AM
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; MRJIC; DLL-HQ-UOCInternal; CENWO-EOC NWO
Subject: ****URGENT****CCIR - Levee Overtopping - Missouri River Levee L-550 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

All,

WHO: US Army Corps of Engineers, Omaha District
WHAT: Federal Levee Overtop - Missouri River PL 84-99 Federal Levee - L-550, Operated and Maintained by a local levee sponsor, built by USACE.
WHEN: 19 June 2011 at 0500
WHERE: Missouri River Levee Unit L-550, Sponsor reported overtopping occurring in several locations north (upstream) of Highway 136 in Atchison County, MO.
WHY: Water levels at the Brownsville gage increased approximately 2 feet in a 24 hour period from 0530 18 June to 0530 19 June. Officials from the State of Missouri and FEMA Region VII have been notified. Atchison County Emergency Management is recommending evacuations for all west of Interstate 29 in Atchison County, Missouri.

[REDACTED]
Natural Disaster Program Manager, Readiness Branch U.S. Army Corps of Engineers, Omaha District
1616 Capitol Ave, Ste 9000 (Attn: CENWO-OD-E) Omaha, NE 68102-9000
Phone: ([REDACTED])
Cell: ([REDACTED])
Fax: ([REDACTED])
[\[REDACTED\]@usace.army.mil](mailto:[REDACTED]@usace.army.mil)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Sunday, June 19, 2011 6:49 AM
To: Farhat, Jody S NWD02
Cc: [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02
Subject: RE: Snowmelt Streamgages (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I'm glad you will find them useful! We don't have an actual link to it yet, but you can get to it by this url:

https://w3.nwo.usace.army.mil/hydro/water_control/bulletins/snowmelt.pdf

Thanks,

[REDACTED]

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Friday, June 17, 2011 6:36 PM
To: [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02
Subject: RE: Snowmelt Streamgages (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] - these are great. We'll look for them on your internal website.

Thanks,
Jody

-----Original Message-----

From: [REDACTED] NWO
Sent: Friday, June 17, 2011 4:18 PM
To: Farhat, Jody S NWD02
Cc: [REDACTED] NWO
Subject: Snowmelt Streamgages (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody,

Col. Ruch asked me to forward this on to you in case you'd like to utilize this information for anything. I will be posting these hydrographs up on our internal website, but as of yet I am not planning on creating a link to them unless they are going to be something we use

often. If you are interested in using this and would like any other gages added to our list please let me know.

Thanks,



Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

NWO

From: CENWD-EOC NWD
Sent: Saturday, June 18, 2011 11:18 PM
To: CE-UOC HQ02
Cc: Eller, Ronald; [REDACTED] HQ02; Stangeland, Gary A SWD@SWG; Acheson, William E LTC NWS; [REDACTED] NWD; [REDACTED] HQ@NWD; [REDACTED] ULA; [REDACTED] D NWD; [REDACTED] NWD; Blechinger, Erik T NWO; Caldwell, David A LTC NWW; Capps, Stephan A LTC NWP; CENWD-EOC NWD; [REDACTED] HQ02; [REDACTED] A NWD; [REDACTED] HQ02; [REDACTED] NWD; Evers, Jason A MAJ NWK; Farhat, Jody S NWD02; [REDACTED] HQ; [REDACTED] HQ02; [REDACTED] NWW; [REDACTED] NWD; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Jordano, James J LTC NWO; [REDACTED] ULA@SAD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWS; Mahn, Richard A Cpt NWD; [REDACTED] M SAW; [REDACTED] ULA@NWD; McMahon, John R BG NWD; Miles, Steven R COL NWP; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] CELA@NWS; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] ; Ruch, Robert J COL NWO; [REDACTED] NWD; Rychlik, Dean L; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Tipton, Robert A Col NWD; [REDACTED] NWD; [REDACTED] ULA@NWW; [REDACTED] HQ02; [REDACTED] NWD; Wetzel, Lindsey ; Wright, Anthony COL NWS
Subject: NWD Operation Mighty Mo SITREP- as of 2130 18 June 2011 (UNCLASSIFIED)
Attachments: NWD Missouri Basin Update - 061811.pdf; NWKnldb_ag_urban (2).xlsx; NWO AG_vs_Urban_Levees.xlsx; NWOLeveesBrief_18_Jun_2011.pdf; NWD%20Contingency%20battle%20rhythm%2013%20JUN%202011.pdf

HQ UOC-

Missouri River Basin Flood Update as of 2130 18 June 2011 Pacific Time:

This report covers the operational period from 2130 17 June to 2130 18 June 2011 Pacific Time.

A. Update from NWD Missouri River Basin Water Management Office:

1. As a result of increased precipitation in the Nebraska and South Dakota area (up to 2"), we are increasing the peak releases from Oahe and Big Bend to 160,000 cfs. This will transfer water from Oahe to Fort Randall in order to better balance the remaining flood control storage. The peak releases at Fort Randall and Gavins Point remain at 150,000 cfs.
2. If weather continues to deteriorate, we will lose ability to manage the reservoirs with this type of intrasystem adjustments and may be driven to reevaluate releases from Fort Randall and Gavins Point.

Release schedule for the 6 dams are as follows:

4. Fort Peck -Releases remain at 65,000 cfs today and tomorrow, and reduce to 60,000 cfs on Monday as inflows drop off.
5. Garrison - releases remain at 150,000 cfs today
6. Oahe and Big Bend -Releases from both projects were increased to 155,000 cfs today, and will be increased to 160,000 cfs on Sunday..

7. Fort Randall - releases will remain at 143,000 cfs today and tomorrow, gradually stepping up to the peak release of approximately 148,000 cfs with the schedule dependent on the Gavins Point pool level.

8. Gavins Point - releases remain at 150,000 cfs.

B. Omaha District Update:

1. Ft. Peck Dam - Twenty-four hour surveillance continues on the dam and the spillway. Water surface and scour depth data along spillway wing walls obtained 17 Jun 2011 by USGS. Along the right wing wall the water surface was 2034 feet, with a ground elevation of 2009 feet (approximately 80-feet from the spillway exit). Along the left wing wall the water surface was 2036 feet, with a ground elevation of 2006 feet (approximately 120-feet from the spillway exit). Measurements closer to the spillway exit were not taken due to safety concerns. No other Significant Dam Safety Issues

2. North Dakota: Williston, ND - A new boil on the filter berm began pushing material yesterday. Crew ringed the boil. Materials were still being moved. Crew attempted to choke off the boil with spalls and some finer material. Their efforts were successful and the boil began flowing clearer. One of the older boils began to move material late last night. Similar actions will be taken to try to reduce the movement of material. We are going to try and get more sand delivered to the sand berm area. Consideration is being given to extending the sand berm to cover some pin boil activity adjacent to the berm.

3. (FOUO) Garrison Dam - Regulatory tunnel discharges were increased from 60,000 to 75,000 cfs at 20:00. Splashing and rolling waves draining off the structural platform on the west side of tunnel 8 began headcutting the scour hole slopes as it drains off the platform. This is not considered to be a significant dam safety concern at this time.

4. Fort Yates, ND - Standing Rock Sioux Tribe (SRST): South side work is 15% complete.

5. South Dakota: Fort Randall Dam: The repair of concrete slab spalling near the spillway wall was not completed yesterday as reported it will be completed 18 June 2011, the work is being completed by project personnel. Partial flow has been diverted back to the spillway (on the opposite side of where work is being completed) until patches cure. Then full spillway flows will be restored. No additional significant dam safety issues to report.

6. Mills County: Direct Assistance on the L611-614 has begun. Contractor has begun working on layer 1 of the inverted filter blanket. Rain slowed the progress on the haul road today.

7. Update on L601: The piggy-back levee to repair damages was completed last night.

8. Hamburg Ditch 6: The ring levee at the upper end of Segment 1 is nearly complete. The placement of cohesive fill to address boils at areas that were running clear began yesterday. Weather slowed progress preventing access to boil sites and other low areas. Sand for areas that were flowing material continues to be stockpiled. Efforts continue to pump rainwater and dry the site. These areas are still a big concern. Water is at Elevation 916 this morning.

9. Omaha-Missouri River RB: A sewer line and manhole collapsed, causing what resembled a sink-hole. The city closed the entire sewer line in that location and filled the depression with rock. The National Guard and city personnel were given levee surveillance training.

10. L624-627/614/611-Mosquito Creek and Upper Pony Creek: The seepage area near the Narrows Park is demonstrating additional seepage. See Attached Photo.
11. L611/614-MoRiver LB & Upper Pony Creek Ditch LB: Placement of an inverted filter was delayed due to truck access issues caused by rains. During the time of road repairs, all material was rerouted to Hamburg, IA.
12. L601-Watkins Ditch RB: There is seepage at the toe of the levee with a sediment fan. The sponsor is aware and plans to sandbag the area.
13. L601/594: Maintenance, again, appears to be lacking from the sponsors on this levee. Little progress had been made by the evening of June 17 on repairs to a hole repair in the levee. Seepage on the landside continues to be a problem, and the sponsor has been informed. The Waubonsie Creek railroad closure structure is complete.
14. L594/575-BW,PV,Waubonsie: A boil field was identified and marked at the confluence of Waubonsie Creek and the Missouri River. Seepage is saturating the berm and, in some areas, it is wet near the landside toe. The sponsor has been informed of both issues.
15. L575-BW,McKissock, Buchanan, Atchison, Hamburg: USACE is working with sponsors to ensure they are implementing surveillance schedules. Wet seepage areas were found around large sections of the levee. Initial construction of a secondary levee behind drainage structure at the north end to control leakage/seepage is complete. Seepage is beginning to come under I-29. Work continues for installation on seepage blankets/berms. Weather conditions have slowed work progress and boil activity continues to increase. Three feet of freeboard remains on the levee. On the Nishnabotna R side, there are low points that still need to be raised but the levee appears to be dry with no boiling. There are concerns that the placement of plastic on the north side of the levee may not have been adequate. Wave action is beginning to cause erosion and the Corps is aware and taking actions towards correction. See Attached Photo.
16. R548- MO River and Little Nemaha: The sponsor placed 1500 sandbags in vault to cut off most of flow caused by a malfunctioning sluice gate that can't be closed. The flap gates on Whiskey Run are still leaking. The sponsor has placed rock against the gate and thinks flow will soon stop. At Jarvis Creek, the sponsor inserted an inflatable bladder on the landside of the levee in an attempt to seal a leaking flap gate. A USACE field crew advised against the measure, warning that that it would pressurize the pipe. The bladder remains in place. The USACE crew noted and photographed the operation. See Attached Photo.

C. Kansas City District:

1. Levee overtopping tables for lower and higher flow forecast for NWK levees are posted on NWK internet site at: <http://www.nwk.usace.army.mil/Flood/Flood2011.cfm?cat=Levee>. Note that "federal levees" refer to federally authorized and constructed/operated and maintained by local sponsor
2. A map showing location of each of these levees is posted on NWK internet site at: <http://www.nwk.usace.army.mil/Flood/index.cfm> Click on Kansas City District Levee Map Book. Note that "federal levees" refer to federally authorized and constructed/operated and maintained by local sponsor

3. [FOUO] Note that these tables and the map book only show NWK levees potentially impacted by the 2011 MO River Flood event.

4. [FOUO] Per RFI from HQUSACE, attached is spreadsheet of all levees in NWK AOR defining land use.

In column R, land use is:

u = urban

a = agriculture

m = mixed

5. One levee in the database in NWK AOR recently (since 2007) received an "Unacceptable" system rating. That unit is MRLS L-497, which is a federally authorized and constructed levee/operated and maintained by local sponsor.

D. Northwestern Division Update:

NWD is working the following RFI (Requests for Information) from HQ-UOC:

1) [FOUO] On 17 June, HQ requested information regarding any levees that have previously failed inspections or have not been properly maintained by sponsors and have either been breached, overtopped, or having issues identified already by USACE or sponsors, or that NWO or NWK or NWD (mainly NWK AOR) anticipates will be breached, overtopped or have other issues. Spreadsheet for both NWO and NWK are attached [FOUO].

2) [FOUO] On 17 June, HQ requested we specifically identify "agricultural" levees that could be potentially impacted by flooding, in preparation for HQUSACE briefing to the Secretary of Agriculture Monday morning. We are collaborating with NWO and NWK to provide this information as quickly and accurately as possible to HQ. The attached spreadsheets identify Agricultural as requested. Spreadsheet for both NWK and NWK are attached [FOUO].

3) If there are any outstanding RFI from HQ desired from NWD not identified above, please contact CENWD-EOC@usace.army.mil or MAJ Raymond Love at Raymond.e.love@usace.army.mil . Please do not contact NWO or NWK directly, as they are already heavily engaged with state and local stakeholders, and information flows best when using the chain of command anyway.

E. The links below will help "paint the picture" of the region, and also pre-empt questions and RFI's by providing access to the same real-time data that NWD and its Districts use.

Useful Links:

For current reservoir levels, inflows and releases, visit the Missouri River Basin Water Management website at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

Updated Daily: Details on the reservoirs in the daily bulletin at <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>

Release data for all six reservoirs through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

This ftp site contains an excellent pictorial presentation of the Missouri River Basin system. Please take time to review, as it will help you to better understand the situation and the system we manage.

<ftp://ftp.usace.army.mil/pub/nwd/Mo%20River%20Flooding%206%20June%20update/>

[FOUO] The NWD Common Operating Picture. (Contains National Levy Data base, 1-5 day QPF, Dams, Emergency Management layers, latest critical infrastructure data, etc.)
<https://egis.nwd.usace.army.mil/pls/apex/f?p=200:1:1908605002954834>

[FOUO] For great "pictures from the field" of the flood fight, projects, etc visit the MICA (Mobile Information Collectors Application) website:

<https://gearportal.usace.army.mil/sandboils/listing.html>

Select Omaha Flood Fight - "Show Map in Portal" Button.

To use Google Earth - on the MICA Dashboard hit the button "right click to copy to Network link" with a right click. Select Copy Shortcut option.

Open Google Earth and Right click under my places and select Add - scroll down to add a Network link.

Give it a name and paste the short cut you copied from the MICA dashboard. Google should auto refresh the data on a 5 min interval.

For the most accurate and efficient flow of information, please direct and questions, concerns, or comments to the NWD EOC, or to the undersigned. The NWD RCO Battle rhythm is also attached, and it is the most current as of 17 June 2011.

UOC: please acknowledge Receipt.

V/R

[REDACTED]
Contingency Operations Officer
Readiness and Contingency Operations
Northwestern Division
US Army Corps of Engineers

Desk: [REDACTED]

Cell: [REDACTED]

[REDACTED]@usace.army.mil

[REDACTED]@usace.army.smil.mil

Emergency Satellite Phone: [REDACTED] Emergency Cell: [REDACTED]

FOR OFFICIAL USE ONLY [FOUO]- This email and any attachments may contain information that is protected from disclosure by the Privacy Act of 1974 and should be viewed only by those with an official "need to know." If you are not the intended recipient, be aware that any disclosure, copying, distribution or use of the content of this information is prohibited. If you have received this communication in error, please notify me immediately by email, delete the original message, and destroy any hard copies you may have created. Any misuse or unauthorized disclosure may result in both civil and criminal penalties.

Missouri River Basin Stages

18 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
A	Bismarck	16	18.7	150 kcfs 20.6	June 19	
B	Pierre	13	18.9	150 kcfs 18.7	June 7	
C	Yankton	20	25.0	150 kcfs n/a	June 14	
D	Sioux City	30	33.6	170 kcfs 35	June 15	44.28 (1952)
E	Decatur	35	37.8	175 kcfs 40	June 15	43.5 (1943)
F	Blair	26	31.8	175 kcfs 32	June 15	33.5 (1952)
G	Omaha	29	33.5	175 kcfs 34	June 16	40.2 (1952)
H	Nebraska City	18	26.1	200 kcfs 27	June 16	27.19 (1993)
I	Brownville	33	41.7	205 kcfs 43	June 16	44.3 (1993)
J	Rulo	17	25.0	210 kcfs 25.5	June 17	26.63 (2010)
K	St. Joseph	17	23.4	215 kcfs 27	June 17	32.07 (1993)
L	Atchison	22	26.1	215 kcfs 30	June 17	31.63 (1993)
M	Leavenworth	20	21.8	215 kcfs 27	June 17	35.34 (1993)

Missouri River Basin Stages

18 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages		Projected Date **	Record Stage (Year)
N	Kansas City	32	26.0	220 kcfs 30	350 kcfs 39	June 18	48.87 (1993)
O	Sibley	22	25.0	220 kcfs 28	350 kcfs 33	June 18	40.6 (1952)
P	Napoleon	17	21.7	220 kcfs 25	350 kcfs 29	June 18	28.86 (2007)
Q	Waverly	20	24.6	230 kcfs 27	370 kcfs 31	June 18	31.15 (1993)
R	Miami	18	22.7	235 kcfs 26	370 kcfs 30	June 19	32.6 (1993)
S	Glasgow	25	25.5	250 kcfs 32	410 kcfs 37	June 19	39.5 (1993)
T	Boonville	21	21.7	260 kcfs 27	420 kcfs 33	June 19	37.1 (1993)
U	Jefferson City	23	21.1	260 kcfs 27	430 kcfs 35	June 19	38.3 (1993)
V	Chamois	17	17.1	290 kcfs 24	450 kcfs 29	June 19	33.3 (1993)
W	Gasconade	22	23.3	300 kcfs 30	470 kcfs 35	June 19	39.6 (1993)
X	Hermann	21	21.2	300 kcfs 27	470 kcfs 33	June 20	36.97 (1993)
Y	Washington	20	18.0	300 kcfs 23	470 kcfs 32	June 20	35.4 (1993)
Z	St. Charles	25	24.4	300 kcfs 28	470 kcfs 37	June 20	40.04 (1993)

FID	Shape *	OBJECTID	Protect_ID	FC_System	Levee_Stat
0	Polygon ZN	2	3.61E+09	3.61E+09	0+00
1	Polygon ZN	4	3.61E+09	3.61E+09	0+00
2	Polygon ZN	5	3.61E+09	3.61E+09	0+00
3	Polygon ZN	8	3.61E+09	3.61E+09	0+00
4	Polygon ZN	10	3.61E+09	3.61E+09	0+00
5	Polygon ZN	11	3.61E+09	3.61E+09	0+00
6	Polygon ZN	14	3.61E+09	3.61E+09	0+00
7	Polygon ZN	15	3.61E+09	3.61E+09	0+00
8	Polygon ZN	241	3.61E+09	3.61E+09	0+00
9	Polygon ZN	242	3.61E+09	3.61E+09	0+00
10	Polygon ZN	17	3.61E+09	3.61E+09	0+00
11	Polygon ZN	18	3.61E+09	3.61E+09	0+00
12	Polygon ZN	23	3.61E+09	3.61E+09	0+00
13	Polygon ZN	24	3.61E+09	3.61E+09	0+00
14	Polygon ZN	25	3.61E+09	3.61E+09	0+00
15	Polygon ZN	28	3.61E+09	3.61E+09	0+00
16	Polygon ZN	29	3.61E+09	3.61E+09	0+00
17	Polygon ZN	30	3.61E+09	3.61E+09	0+00
18	Polygon ZN	227	3.61E+09	3.61E+09	0+00
19	Polygon ZN	233	3.61E+09	3.61E+09	0+00
20	Polygon ZN	234	3.61E+09	3.61E+09	0+00
21	Polygon ZN	235	3.61E+09	3.61E+09	0+00
22	Polygon ZN	236	3.61E+09	3.61E+09	0+00
23	Polygon ZN	237	3.61E+09	3.61E+09	0+00
24	Polygon ZN	243	3.61E+09	3.61E+09	0+00
25	Polygon ZN	244	3.61E+09	3.61E+09	0+00
26	Polygon ZN	31	3.61E+09	3.61E+09	0+00
27	Polygon ZN	34	3.61E+09	3.61E+09	0+00
28	Polygon ZN	35	3.61E+09	3.61E+09	0+00
29	Polygon ZN	36	3.61E+09	3.61E+09	0+00
30	Polygon ZN	37	3.61E+09	3.61E+09	0+00
31	Polygon ZN	38	3.61E+09	3.61E+09	0+00
32	Polygon ZN	39	3.61E+09	3.61E+09	0+00
33	Polygon ZN	44	3.61E+09	3.61E+09	0+00
34	Polygon ZN	45	3.61E+09	3.61E+09	0+00
35	Polygon ZN	208	3.61E+09	3.61E+09	0+00
36	Polygon ZN	367	3.61E+09	3.61E+09	0+00
37	Polygon ZN	368	3.61E+09	3.61E+09	0+00
38	Polygon ZN	369	3.61E+09	3.61E+09	0+00
39	Polygon ZN	370	3.61E+09	3.61E+09	0+00
40	Polygon ZN	311	3.61E+09	3.61E+09	0+00
41	Polygon ZN	312	3.61E+09	3.61E+09	0+00
42	Polygon ZN	212	3.61E+09	3.61E+09	0+00
43	Polygon ZN	213	3.61E+09	3.61E+09	0+00
44	Polygon ZN	214	3.61E+09	3.61E+09	0+00
45	Polygon ZN	184	3.61E+09	3.61E+09	0+00

46 Polygon ZN	186	3.61E+09	3.61E+09	0+00
47 Polygon ZN	190	3.61E+09	3.61E+09	0+00
48 Polygon ZN	191	3.61E+09	3.61E+09	0+00
49 Polygon ZN	306	3.61E+09	3.61E+09	0+00
50 Polygon ZN	360	3.61E+09	3.61E+09	0+00
51 Polygon ZN	361	3.61E+09	3.61E+09	0+00
52 Polygon ZN	362	3.61E+09	3.61E+09	0+00
53 Polygon ZN	324	3.61E+09	3.61E+09	0+00
54 Polygon ZN	329	3.61E+09	3.61E+09	0+00
55 Polygon ZN	331	3.61E+09	3.61E+09	0+00
56 Polygon ZN	307	3.61E+09	3.61E+09	0+00
57 Polygon ZN	188	3.61E+09	3.61E+09	0+00
58 Polygon ZN	203	3.61E+09	3.61E+09	0+00
59 Polygon ZN	204	3.61E+09	3.61E+09	0+00
60 Polygon ZN	210	3.61E+09	3.61E+09	0+00
61 Polygon ZN	308	3.61E+09	3.61E+09	0+00
62 Polygon ZN	313	3.61E+09	3.61E+09	0+00
63 Polygon ZN	314	3.61E+09	3.61E+09	0+00
64 Polygon ZN	181	3.61E+09	3.61E+09	0+00
65 Polygon ZN	205	3.61E+09	3.61E+09	0+00
66 Polygon ZN	206	3.61E+09	3.61E+09	0+00
67 Polygon ZN	207	3.61E+09	3.61E+09	0+00
68 Polygon ZN	182	3.61E+09	3.61E+09	0+00
69 Polygon ZN	302	3.61E+09	3.61E+09	0+00
70 Polygon ZN	304	3.61E+09	3.61E+09	0+00
71 Polygon ZN	305	3.61E+09	3.61E+09	0+00
72 Polygon ZN	309	3.61E+09	3.61E+09	0+00
73 Polygon ZN	97	3.61E+09	3.61E+09	0+00
74 Polygon ZN	348	3.61E+09	3.61E+09	0+00
75 Polygon ZN	349	3.61E+09	3.61E+09	0+00
76 Polygon ZN	350	3.61E+09	3.61E+09	0+00
77 Polygon ZN	180	3.61E+09	3.61E+09	0+00
78 Polygon ZN	185	3.61E+09	3.61E+09	0+00
79 Polygon ZN	193	3.61E+09	3.61E+09	0+00
80 Polygon ZN	187	3.61E+09	3.61E+09	0+00
81 Polygon ZN	194	3.61E+09	3.61E+09	0+00
82 Polygon ZN	195	3.61E+09	3.61E+09	0+00
83 Polygon ZN	196	3.61E+09	3.61E+09	0+00
84 Polygon ZN	332	3.61E+09	3.61E+09	0+00
85 Polygon ZN	342	3.61E+09	3.61E+09	0+00
86 Polygon ZN	351	3.61E+09	3.61E+09	0+00
87 Polygon ZN	197	3.61E+09	3.61E+09	0+00
88 Polygon ZN	198	3.61E+09	3.61E+09	0+00
89 Polygon ZN	199	3.61E+09	3.61E+09	0+00
90 Polygon ZN	200	3.61E+09	3.61E+09	0+00
91 Polygon ZN	209	3.61E+09	3.61E+09	0+00
92 Polygon ZN	303	3.61E+09	3.61E+09	0+00

93 Polygon ZN	328	3.61E+09	3.61E+09	0+00
94 Polygon ZN	341	3.61E+09	3.61E+09	0+00
95 Polygon ZN	354	3.61E+09	3.61E+09	0+00
96 Polygon ZN	356	3.61E+09	3.61E+09	0+00
97 Polygon ZN	357	3.61E+09	3.61E+09	0+00
98 Polygon ZN	216	3.61E+09	3.61E+09	0+00
99 Polygon ZN	217	3.61E+09	3.61E+09	0+00
100 Polygon ZN	218	3.61E+09	3.61E+09	0+00
101 Polygon ZN	201	3.61E+09	3.61E+09	0+00
102 Polygon ZN	179	3.61E+09	3.61E+09	0+00
103 Polygon ZN	310	3.61E+09	3.61E+09	0+00
104 Polygon ZN	202	3.61E+09	3.61E+09	0+00
105 Polygon ZN	220	3.61E+09	3.61E+09	0+00
106 Polygon ZN	333	3.61E+09	3.61E+09	0+00
107 Polygon ZN	334	3.61E+09	3.61E+09	0+00
108 Polygon ZN	346	3.61E+09	3.61E+09	0+00
109 Polygon ZN	347	3.61E+09	3.61E+09	0+00
110 Polygon ZN	352	3.61E+09	3.61E+09	0+00
111 Polygon ZN	353	3.61E+09	3.61E+09	0+00
112 Polygon ZN	232	3.61E+09	3.61E+09	0+00
113 Polygon ZN	178	3.61E+09	3.61E+09	0+00
114 Polygon ZN	189	3.61E+09	3.61E+09	0+00
115 Polygon ZN	211	3.61E+09	3.61E+09	0+00
116 Polygon ZN	215	3.61E+09	3.61E+09	0+00
117 Polygon ZN	221	3.61E+09	3.61E+09	0+00
118 Polygon ZN	238	3.61E+09	3.61E+09	0+00
119 Polygon ZN	240	3.61E+09	3.61E+09	0+00
120 Polygon ZN	247	3.61E+09	3.61E+09	0+00
121 Polygon ZN	358	3.61E+09	3.61E+09	0+00
122 Polygon ZN	301	3.61E+09	3.61E+09	0+00
123 Polygon ZN	318	3.61E+09	3.61E+09	0+00
124 Polygon ZN	319	3.61E+09	3.61E+09	0+00
125 Polygon ZN	320	3.61E+09	3.61E+09	0+00
126 Polygon ZN	321	3.61E+09	3.61E+09	0+00
127 Polygon ZN	322	3.61E+09	3.61E+09	0+00
128 Polygon ZN	326	3.61E+09	3.61E+09	0+00
129 Polygon ZN	335	3.61E+09	3.61E+09	0+00
130 Polygon ZN	336	3.61E+09	3.61E+09	0+00
131 Polygon ZN	337	3.61E+09	3.61E+09	0+00
132 Polygon ZN	338	3.61E+09	3.61E+09	0+00
133 Polygon ZN	339	3.61E+09	3.61E+09	0+00
134 Polygon ZN	343	3.61E+09	3.61E+09	0+00
135 Polygon ZN	344	3.61E+09	3.61E+09	0+00
136 Polygon ZN	345	3.61E+09	3.61E+09	0+00
137 Polygon ZN	359	3.61E+09	3.61E+09	0+00
138 Polygon ZN	365	3.61E+09	3.61E+09	0+00
139 Polygon ZN	366	3.61E+09	3.61E+09	0+00

140 Polygon ZN	371	3.61E+09	3.61E+09	0+00
141 Polygon ZN	372	3.61E+09	3.61E+09	0+00
142 Polygon ZN	373	3.61E+09	3.61E+09	0+00

Feature_Na	Warn_d	Protected_	Min_Prote	Egress_Nur
New Haven	No	bluff to blu	100	2
Birmingham Unit	No	bluff to blu	100	12
East Bottoms Unit	No	bluff to blu	100	15
Fairfax-Jersey Creek	No	bluff to blu	100	10
MRLS 400-L	No	bluff to blu	100	11
MRLS 408-L	No	bluff to blu	100	16
MRLS 455-L	No	bluff to blu	100	9
MRLS 471-460-R	No	bluff to blu	100	19
MRLS 448-443-L	No	bluff to blu	100	31
MRLS 476-L	No	bluff to blu	100	1
MRLS 482-R	No	bluff to blu	100	4
MRLS 488-L (Holt County District No. 7)	No	bluff to blu	100	9
Stonehouse Creek Drainage District No. 1	No	Project ma	100	5
Osawatomie	No	levee, proje	100	56
Oakland	No	levee, proje	100	6
North Topeka Unit - Soldier Creek RB2	No	Project Ma	100	0
Water Works Unit (South Topeka)	No	Project Ma	100	6
Auburndale Unit (S. Topeka)	No	Project Ma	100	55
Gypsum	No	Project Ma	100	4
Barnard, Kansas	No	Project Ma	100	0
CID, Central Industrial District	No	Project Ma	100	33
Manhattan Unit	Yes	Project Ma	100	32
MRLS 351-R, Section 2	No	bluff to blu	100	9
MRLS 351-R, Section 1	No	bluff to blu	100	3
MRLS 497-L	No	bluff to blu	100	8
MRLS 500-R	No	bluff to blu	100	2
Salina, KS FPP	No	Project Ma	100	15
Indianola, NE	No	Project Ma	100	18
Seward, NE FPP	No	Project Ma	100	13
Fairbury, NE	No	Project Ma	100	8
Clyde	No	Project Ma	100	16
Frankfort, Kansas	No	Project Ma	100	15
Marysville, Kansas	No	Contour fr	100	25
Abilene Unit	No	Digitized fr	100	54
South Topeka Unit	No	levee, proje	100	19
Plow Boy Bend Levee Association	No	bluff to blu	5	0
Soldier Creek Unit LB4	No	Project Ma	100	0
Soldier Creek Unit LB5	No	Project Ma	100	0
Soldier Creek Unit LB2	No	Project Ma	100	0
Soldier Creek Unit LB3	No	Project Ma	100	0
Mi-De Levee District	No	bluff to blu	5	3
MRLS 246-L	No	bluff to blu	50	28
Howard County Levee District No. 4	No	bluff to blu	5	5
Howard DD 3 sec 2 LD 7 sec 4 LD 2	No	bluff to blu	5	0
Linneman-Weekly Levee, Inc.	No	bluff to blu	5	0
MO Valley L.D. Sec 2 (Charrette Bottom)	No	bluff to blu	5	5

Berger Levee District of Franklin County, MO	No	bluff to blu	5	2
Diermann Levee District	No	bluff to blu	5	0
A-1 Levee Association	No	bluff to blu	5	3
Garden of Eden Whitham Drainage	No	bluff to blu	5	6
MRLS 512-513-R (Richardson County D.D. No. 7) SE	No	bluff to blu	100	15
MRLS 512-513-R (Richardson County D.D. No. 7) N	No	bluff to blu	100	15
MRLS 512-513-R (Richardson County D.D. No. 7) SW	No	bluff to blu	100	15
MO Valley D&L Dist of Ray Co. MO, Section 1	No	bluff to blu	10	11
Ray-Lafayette LD 2 Henrietta Crooked LD sec 1	No	bluff to blu	10	0
Tri-County Drainage District No. 1, Section 2	No	bluff to blu	10	6
Garden of Eden Drainage District 2	No	bluff to blu	5	3
Tri-County Levee District, Sec 1	No	bluff to blu	5	28
Cole Junction Levee District	No	bluff to blu	5	1
Prison Farm Levee	No	bluff to blu	5	0
Levee District No. 1 of Cooper County	No	bluff to blu	5	4
Garden of Eden Drainage District 3	No	bluff to blu	5	2
Saline County Levee District No. 2	No	bluff to blu	5	3
Malta Coles Saline-Lafayette Teteseau Districts	No	bluff to blu	5	0
St. Johns Bottom Levee Association, Inc.	No	bluff to blu	5	1
Hartsburg Levee District, Section 3	No	bluff to blu	5	0
Hartsburg Levee District, Section 2	No	bluff to blu	5	9
Hartsburg Levee District, Section 1	No	bluff to blu	5	1
Holtmeier Levee Association, Inc.	No	bluff to blu	5	0
Brunswick Levee District	No	bluff to blu	5	1
Dewitt D&L District of Carroll Co., Section 1	No	bluff to blu	5	2
Dewitt D&L District of Carroll Co., Section 2	No	bluff to blu	5	5
Lower Chariton River Levee District	No	bluff to blu	5	9
Tri-County Drainage District No. 1, Section 1	No	bluff to blu	5	4
Grape-Bollin-Schwartz Levee Association	No	bluff to blu	10	0
Wolcott Drainage District Section 2	No	bluff to blu	10	0
Wolcott Drainage District Section 1	No	bluff to blu	10	2
Tuque Creek Levee	No	bluff to blu	5	0
MO Valley L.D. Sec 1	No	bluff to blu	5	19
Steedman Levee District	No	bluff to blu	5	7
Tri-County Levee District Sec 2	No	bluff to blu	5	17
Mokane Levee District	No	bluff to blu	5	15
Chamois Levee District Section 2	No	bluff to blu	5	1
Chamois Levee District Section 1	No	bluff to blu	5	2
Ft. Riley Forsyth	No	bluff to blu		0
Hays City Levee	No	bluff to blu	10	66
Canon Drainage District and Kimsey Holly Creek	No	bluff to blu	10	2
Tebbetts East Levee District	No	bluff to blu	5	9
Jacobs Levee District	No	bluff to blu	5	0
Wainwright Levee District	No	bluff to blu	5	1
Rievaux Drainage District	No	bluff to blu	5	2
McBaine Levee District	No	bluff to blu	5	3
Cambridge Levee Assn., Inc. (NFP)	No	bluff to blu	5	0

Kaw River Drainage District	No	bluff to blu	10	18
Tri-County Drainage District No.1, Section 3	No	bluff to blu	10	19
Little Tarkio Drainage District No. 1, Section 1	No	bluff to blu	10	0
Little Tarkio Drainage District No. 1, Section 3	No	USGS topo	10	0
Henry Pohl Levee	No	bluff to blu	10	1
Levee District Number 6 of Howard County	No	bluff to blu	5	2
Northeastern Saline Levee Association	No	bluff to blu	5	1
West Glasgow Levee District of Saline County, MO	No	bluff to blu	5	5
Capital View Drainage District	No	bluff to blu	5	7
Labadie Bottom Levee, Section 4	No	bluff to blu	5	1
Miami Levee District No. 1	No	bluff to blu	5	0
Renz Levee District	No	bluff to blu	5	2
Armourdale Unit	No	with center	100	24
Ft. Riley Marshall Field	No	bluff to blu		0
Ft. Riley Funston	No	bluff to blu		0
Kansas Department of Corrections	No	bluff to blu	10	0
Holt County Levee District No. 10, Section 2	No	bluff to blu	10	14
Holt County Levee District No. 9	No	bluff to blu	10	4
Ft. Leavenworth, Kansas	No	bluff to blu	10	4
Lawrence Unit	No	levee and a	100	11
St. Albans Labadie Bottoms LD, Sections 5, 6	No	bluff to blu	5	4
Morrison Lower Bottom Levee District	No	bluff to blu	5	3
Bonne Femme Levee District No. 1	No	bluff to blu	5	1
Howard County Drainage District No. 3, Section 1	No	bluff to blu	5	0
Argentine Unit	No	with center	100	11
MRLS 385-L	No	bluff to blu	100	13
MRLS 440-R	No	bluff to blu	100	1
North Kansas City Levee Unit	No	bluff to blu	100	4
Lake City AAP	No	bluff to blu	10	0
Big Bend Levee District	No	bluff to blu	5	1
Wakenda	No	bluff to blu	10	0
Baltimore Cherry Miles Ray Henrietta Crooked	No	bluff to blu	10	0
Sugartree Bottom Levee District	No	bluff to blu	10	9
Egypt Levee & Drainage District	No	bluff to blu	10	1
MO Valley D&L Dist of Ray Co. MO, Section 2	No	bluff to blu	10	0
MO Valley D&L Dist of Ray Co. MO, Section 3	No	bluff to blu	10	2
Fall Leaf Drainage District	No	bluff to blu	10	0
Douglas County Drainage District	No	USGS topo	10	0
GSA Bannister Complex	No	bluff to blu	500	0
Truman Outlet Works LB	No	digitized		0
Truman Outlet Works RB	No	digitized		0
Platte Cty DD 1 sec 1 Rushville Sugar lake	No	bluff to blu	10	0
Union Township Holt Cty LD 10 sec 1	No	bluff to blu	10	0
Platte Cty Drainage Dist 1 sec. 2, Bean Lake	No	bluff to blu	10	9
Wolcott Drainage District Section 3	No	bluff to blu	10	0
Ottawa KS Right Bank	No	levee, proje	100	63
Ottawa KS Left Bank	No	levee, proje	100	63

Soldier Creek Unit LB1	No	Project Ma	100	0
Soldier Creek Unit RB1	No	Project Ma	100	0
Soldier Creek Unit LB6	No	Project Ma	100	0

Horiz_Accu	Vert_Accu	Coordinate	Comments	SHAPE_Ler	SHAPE_Are	Land_Use
200	200	Using phot	Federal prc	0.012945	0.000006	u
200	200	Using phot	Federal prc	0.233862	0.002222	u
200	200	Using phot	Federal prc	0.24637	0.001803	u
200	200	Using phot	Federal prc	0.157173	0.000888	u
200	200	Using phot	Federal prc	0.227017	0.001613	a
200	200	Using phot	Federal prc	0.332735	0.004154	m
200	200	Using phot	Federal prc	0.321027	0.003289	m
200	200	Using phot	Federal prc	0.358528	0.00562	m
200	200	Using phot	Federal prc	0.50171	0.007374	a
200	200	Using phot	Federal prc	0.204172	0.00235	a
200	200	Using phot	Federal prc	0.231955	0.002036	a
200	200	Using phot	Federal prc	0.370941	0.003783	a
200	200	Heads-up c	Federal prc	0.041061	0.000084	m
200	200	Heads-up c	Federal prc	0.178054	0.000309	u
200	200	Heads-up c	Federal prc	0.19331	0.001359	u
200	200	Heads-up c	Federal prc	0.286014	0.002555	u
200	200	Heads-up c	Federal prc	0.021551	0.000023	u
200	200	Heads-up c	Federal prc	0.078633	0.000081	u
200	200	Heads-up c	Federal prc	0.107938	0.000227	m
200	200	Heads-up c	Federal prc	0.038657	0.000078	m
200	200	Heads-up c	Federal prc	0.144245	0.000412	u
200	200	Heads-up c	Federal prc	0.127695	0.000634	u
200	200	Using phot	Federal prc	0.124787	0.000737	m
200	200	Using phot	Federal prc	0.297507	0.002654	a
200	200	Using phot	Federal prc	0.274499	0.002942	a
200	200	Using phot	Federal prc	0.120679	0.000637	a
200	200	Heads-up c	Federal prc	0.380816	0.006034	m
200	200	Heads-up c	Federal prc	0.034691	0.000068	u
200	200	Heads-up c	Federal prc	0.042317	0.000047	u
200	200	Heads-up c	Federal prc	0.048368	0.000105	m
200	200	Heads-up c	Federal prc	0.046827	0.000107	u
200	200	Heads-up c	Federal prc	0.07158	0.000161	m
200	200	Other	Non-Feder	0.098593	0.000226	u
200	200	Heads-up c	Federal prc	0.30467	0.000662	m
200	200	Heads-up c	Federal prc	0.075083	0.00009	u
200	200	Using phot	Non-Feder	0.15022	0.001036	a
200	200	Heads-up c	Federal prc	0.019518	0.000007	u
200	200	Heads-up c	Federal prc	0.032008	0.000024	u
200	200	Heads-up c	Federal prc	0.037225	0.00006	a
200	200	Heads-up c	Federal prc	0.055415	0.000063	m
200	200	Heads-up c	Non-Feder	0.215083	0.001943	a
200	200	Heads-up c	Federal prc	0.500846	0.011898	a
200	200	Using phot	Non-Feder	0.227297	0.00158	a
200	200	Using phot	Non-Feder	0.457173	0.00545	a
200	200	Using phot	Non-Feder	0.085304	0.000371	a
200	200	Using phot	Non-Feder	0.067639	0.000182	m

200	200 Using phot Non-Feder	0.313474	0.003139	a
200	200 Using phot Non-Feder	0.0482	0.000073	a
200	200 Using phot Non-Feder	0.290109	0.001799	a
200	200 Heads-up c Non-Feder	0.324877	0.003455	a
200	200 Using phot Southeast	0.161055	0.000929	a
200	200 Using phot North porti	0.237696	0.00222	a
200	200 Using phot Southwest	0.049634	0.000132	a
20	200 Heads-up c Non-Feder	0.287855	0.004688	a
200	200 Heads-up c Non-Feder	0.523774	0.012532	m
200	200 Heads-up c Non-Feder	0.18273	0.001728	a
200	200 Heads-up c Non-Feder	0.175838	0.001693	a
200	200 Using phot Non-Feder	0.392129	0.003177	a
200	200 Using phot Non-Feder	0.197219	0.001082	m
200	200 Using phot Non-Feder	0.113227	0.000418	a
200	200 Using phot Non-Feder	0.243952	0.001438	a
200	200 Heads-up c Non-Feder	0.174024	0.001368	a
200	200 Heads-up c Non-Feder	0.191673	0.001416	a
200	200 Heads-up c Non-Feder	0.783272	0.009275	a
200	200 Using phot Non-Feder	0.099316	0.00036	a
200	200 Using phot Non-Feder	0.113181	0.000308	a
200	200 Using phot Non-Feder	0.099994	0.000556	a
200	200 Using phot Non-Feder	0.150462	0.000861	a
200	200 Using phot Non-Feder	0.061276	0.000109	a
200	200 Heads-up c Non-Feder	0.182436	0.001573	a
200	200 Using phot Non-Feder	0.020137	0.000017	a
200	200 Heads-up c Non-Feder	0.155513	0.001005	a
200	200 Heads-up c Federal pro	0.469627	0.008617	a
200	200 Using phot Non-Feder	0.11405	0.000732	a
200	200 Heads-up c Non-Feder	0.139104	0.000453	a
200	200 Heads-up c Non-Feder	0.129552	0.000393	a
200	200 Heads-up c Non-Feder	0.098215	0.000373	m
200	200 Using phot Non-Feder	0.153421	0.000703	a
200	200 Using phot Non-Feder	0.417297	0.003605	a
200	200 Using phot Non-Feder	0.159271	0.000977	a
200	200 Using phot Non-Feder	0.264226	0.002082	a
200	200 Using phot Non-Feder	0.092946	0.000392	a
200	200 Using phot Non-Feder	0.08137	0.000155	a
200	200 Using phot Non-Feder	0.049788	0.000039	a
200	200 Heads-up c Federal pro	0.073769	0.000287	m
200	200 Heads-up c Non-Feder	0.114556	0.000679	u
200	200 Heads-up c Non-Feder	0.269111	0.004233	a
200	200 Using phot Non-Feder	0.223302	-0.00095	a
200	200 Using phot Non-Feder	0.06696	0.000171	a
200	200 Using phot Non-Feder	0.126667	0.000687	a
200	200 Using phot Non-Feder	0.156328	0.001012	a
200	200 Using phot Non-Feder	0.211548	0.001043	m
200	200 Heads-up c Non-Feder	0.109751	0.000587	a

200	200 Heads-up c Non-Feder:	0.323358	0.00348	a
200	200 Heads-up c Non-Feder:	0.271022	0.002452	a
200	200 Heads-up c Non-Feder:	0.086648	0.000254	a
200	200 Heads-up c Non-Feder:	0.043503	0.000101	a
200	200 Heads-up c Non-Feder:	0.083709	0.000285	a
200	200 Using phot Non-Feder:	0.081967	0.000183	a
200	200 Using phot Non-Feder:	0.09277	0.000317	a
200	200 Using phot Non-Feder:	0.345596	0.003034	a
200	200 Heads-up c Non-Feder:	0.197451	0.001371	u
200	200 Using phot Non-Feder:	0.114216	0.000395	a
200	200 Heads-up c Non-Feder:	0.23965	0.001923	a
200	200 Using phot Non-Feder:	0.093041	0.000373	m
200	200 Heads-up c Federal prc	0.18715	0.000809	u
200	200 Heads-up c Federal prc	0.072442	0.000318	u
200	200 Heads-up c Federal prc	0.08854	0.000383	u
200	200 Heads-up c Non-Feder:	0.173142	0.001265	a
200	200 Heads-up c Non-Feder:	0.320396	0.004485	a
200	200 Heads-up c Non-Feder:	0.278389	0.003465	a
200	200 Heads-up c Federal prc	0.07767	0.000272	m
200	200 Heads-up c Federal prc	0.317835	0.003604	m
200	200 Using phot Non-Feder:	0.193734	0.001321	a
200	200 Using phot Non-Feder:	0.102115	0.000391	a
200	200 Using phot Non-Feder:	0.282678	0.002238	a
200	200 Using phot Non-Feder:	0.030926	0.000044	a
200	200 Heads-up c Federal prc	0.152396	0.000671	u
200	200 Using phot Federal prc	0.154309	0.000769	u
200	200 Using phot Federal prc	0.201757	0.001869	a
200	200 Using phot Federal prc	0.160828	0.001238	u
200	200 Heads-up c Federal prc	0.167128	0.000868	m
200	200 Heads-up c Non-Feder:	0.137363	0.000759	a
200	200 Heads-up c Non-Feder:	0.639884	0.010581	a
200	200 Heads-up c Non-Feder:	0.678905	0.005735	m
200	200 Heads-up c Non-Feder:	0.371948	0.005285	a
200	200 Heads-up c Non-Feder:	0.305958	0.00191	a
200	200 Heads-up c Non-Feder:	0.051461	0.000124	a
200	200 Heads-up c Non-Feder:	0.061384	0.00012	a
200	200 Heads-up c Non-Feder:	0.081809	0.000337	a
200	200 Heads-up c Non-Feder:	0.128538	0.000605	a
200	200 Heads-up c Federal prc	0.047361	0.000124	u
200	200 Heads-up c Federal prc	0.047785	0.000124	u
200	200 Heads-up c Federal prc	0.066357	0.000102	a
200	200 Heads-up c Non-Feder:	0.295228	0.003909	m
200	20 Heads-up c Non-Feder:	0.157775	0.000748	a
200	200 Heads-up c Non-Feder:	0.282908	0.003052	m
200	200 Heads-up c Non-Feder:	0.052242	0.000086	a
200	200 Heads-up c Federal prc	0.115043	0.000255	u
200	200 Heads-up c Federal prc	0.041574	0.000073	u

200	200 Heads-up c Federal prc	0.019908	0.000019	a
200	200 Heads-up c Federal prc	0.072599	0.000144	a
200	200 Heads-up c	0.026599	0.000031	a

Missouri River Levee Freeboard As Of: 17 June 2011

Levee	FreeBoard (ft)		Difference
	Stream Gage	Staff Gage	
L627	4.9	5.5	0.6
L624	4.9	6.3	1.4
L611-614	4.9	4.8	-0.1
R616	3.5	3.5	0
R613	3.7	3.6	-0.1
L601	3	3.2	0.2
L594	4	4	0
L575	Breached	Breached	
R573	2.2	2.9	0.7
R562	2.7	3.9	1.2
R548	2.7	3.1	0.4
L550	3	2.9	-0.1
L536	3.2	3.3	0.1
R520	5.6	5.7	0.1

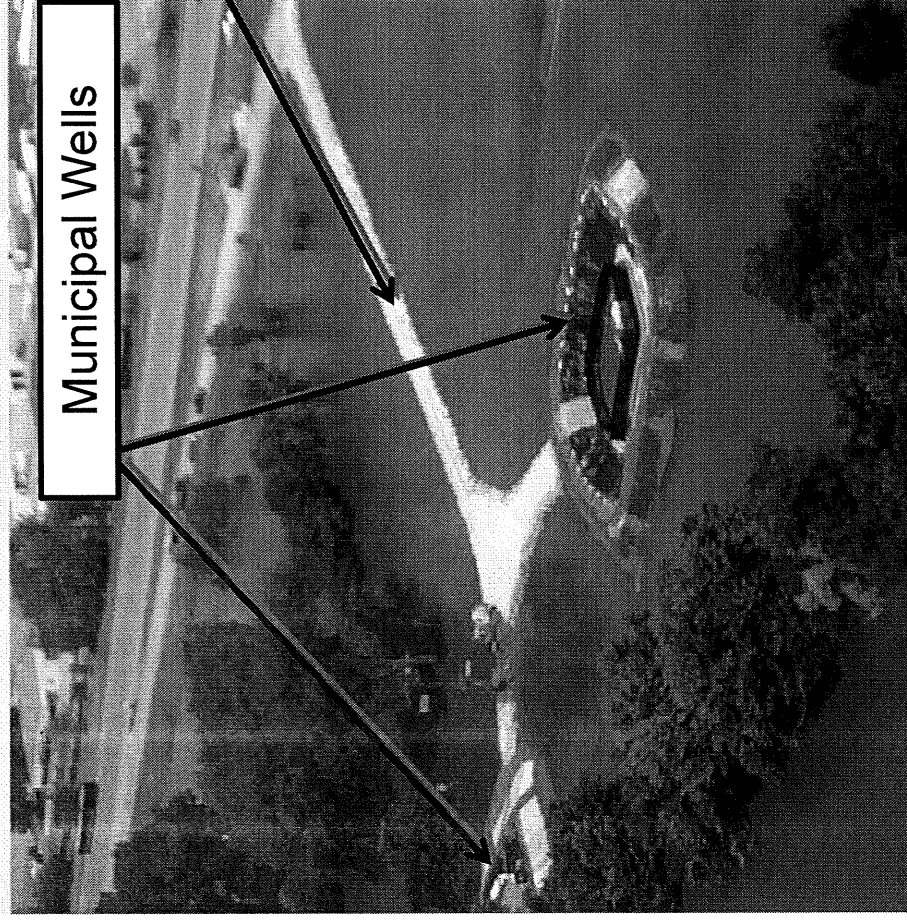


*6 to come off mute

BUILDING STRONG®

Iowa

Sioux City Municipal Wells/L601 Piggy-Back Levee



Municipal Wells

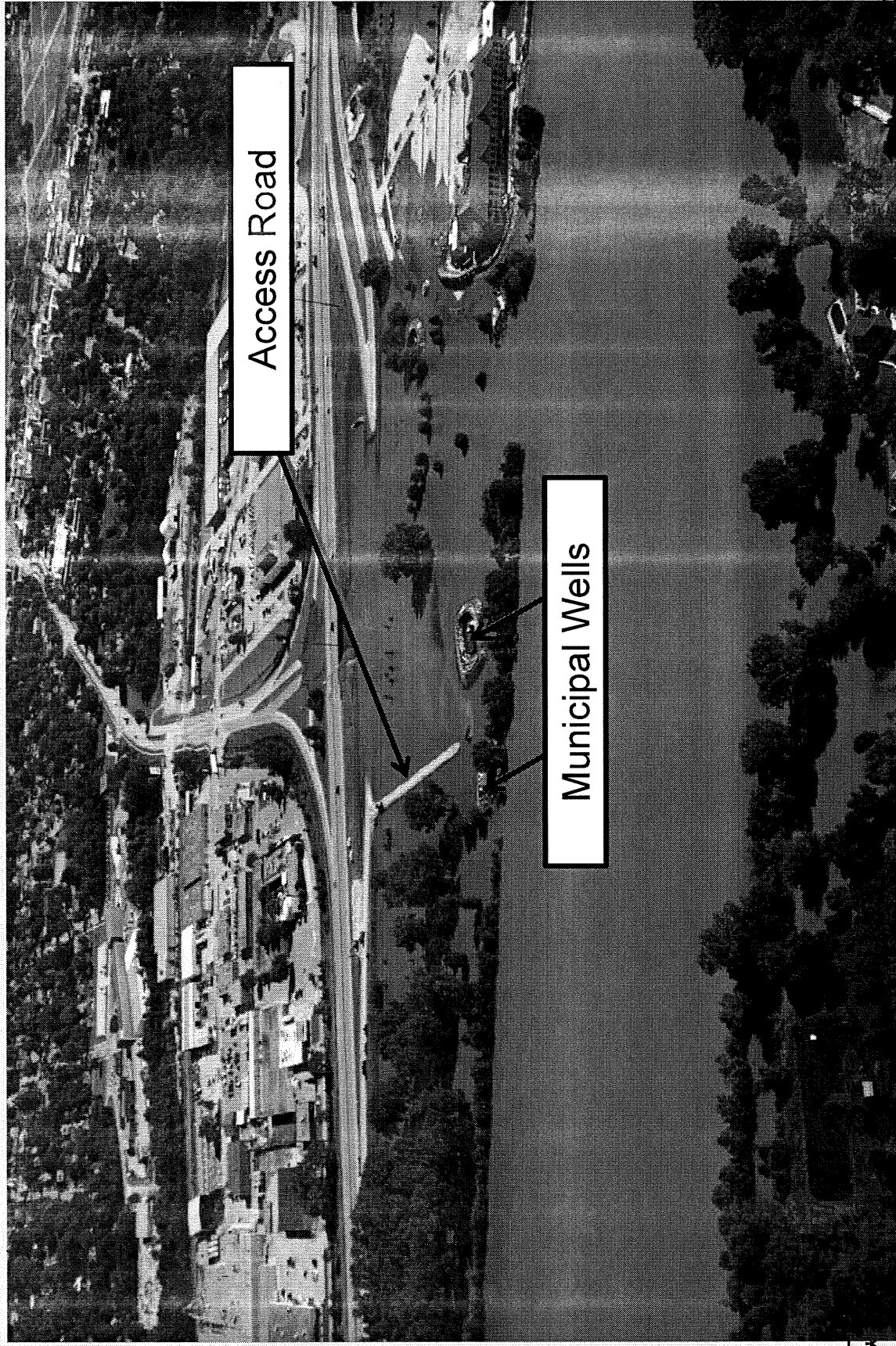
Access Road



L601 Piggy-Back Levee

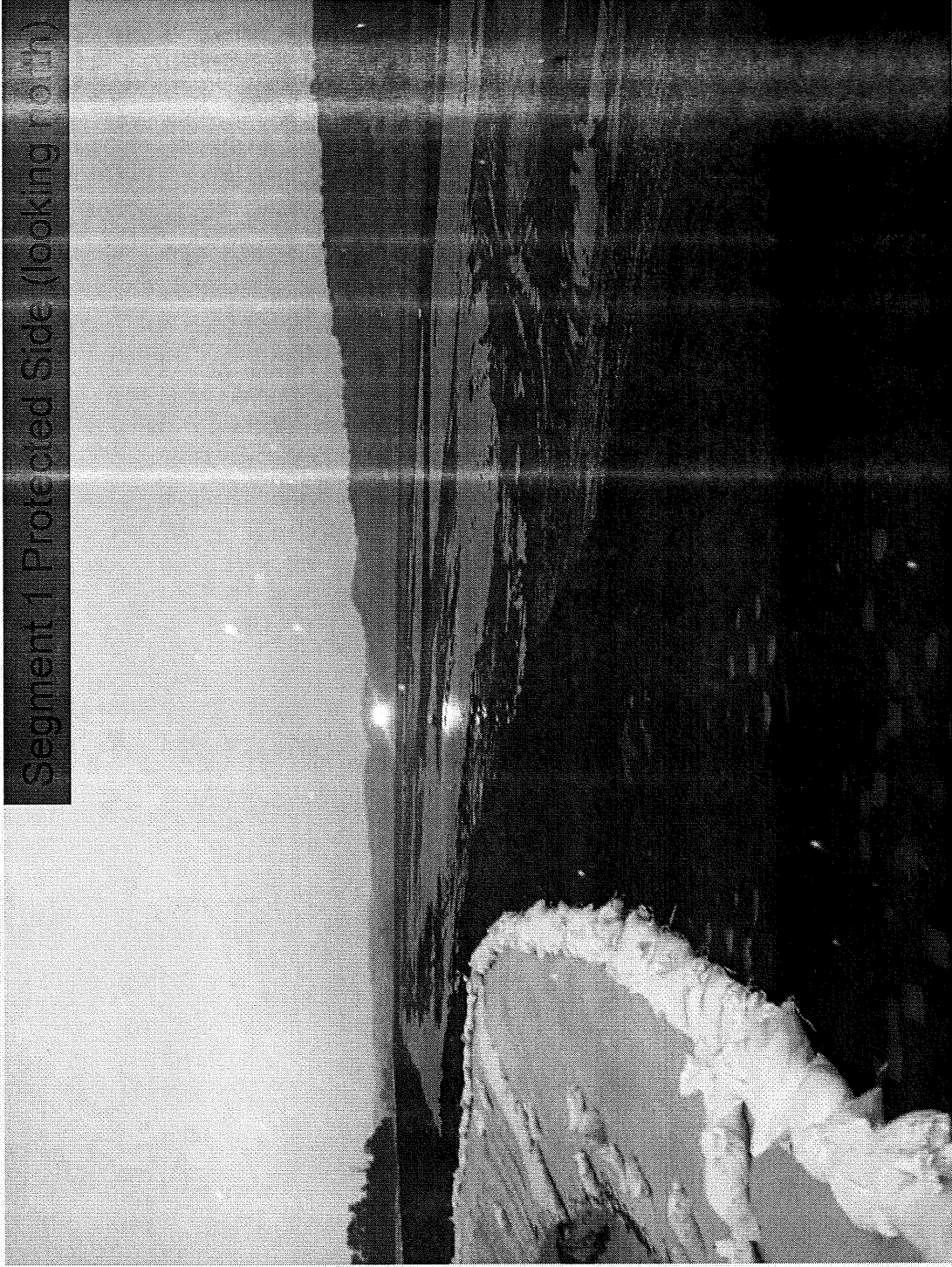
*6 to come off mute

Iowa Sioux City Municipal Wells



Hamburg IA Levee Raise

Segment 1 Protected Side (looking north)



*6 to come off mute

4

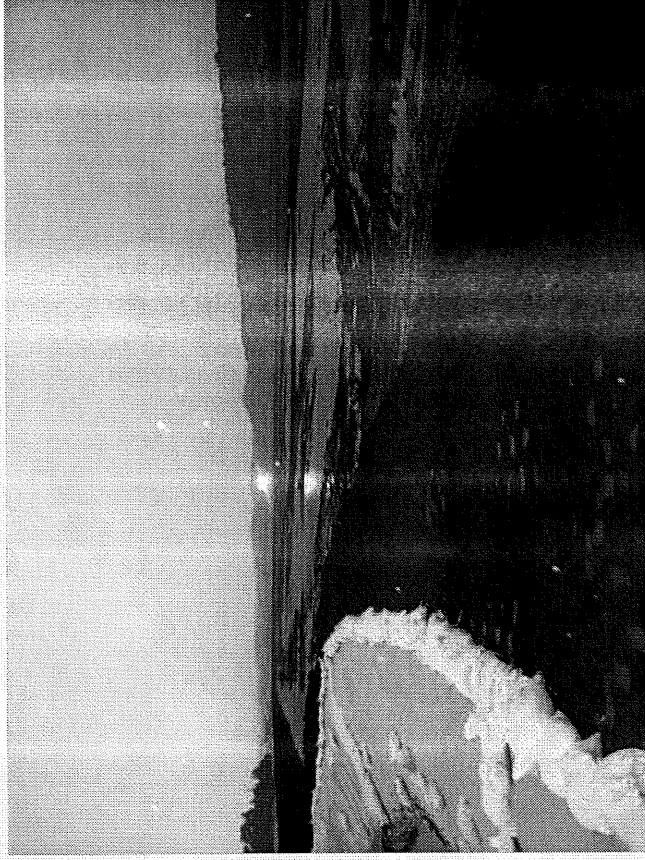
BUILDING STRONG®

Hamburg IA Levee Raise



17 June

Segment 1 Interior



18 June



*6 to come off mute

Hamburg IA Levee Raise

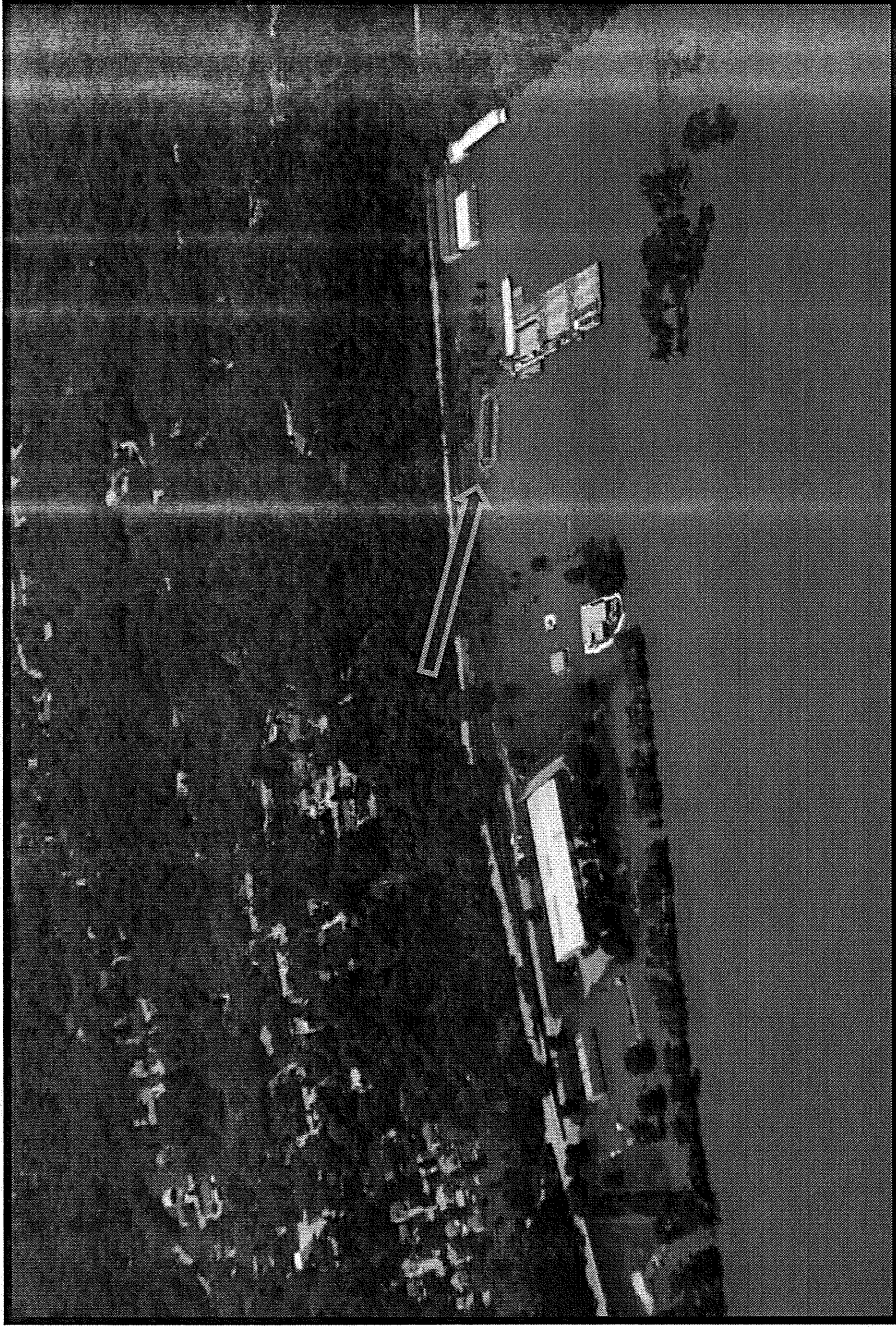


South RR Closure-City Completed



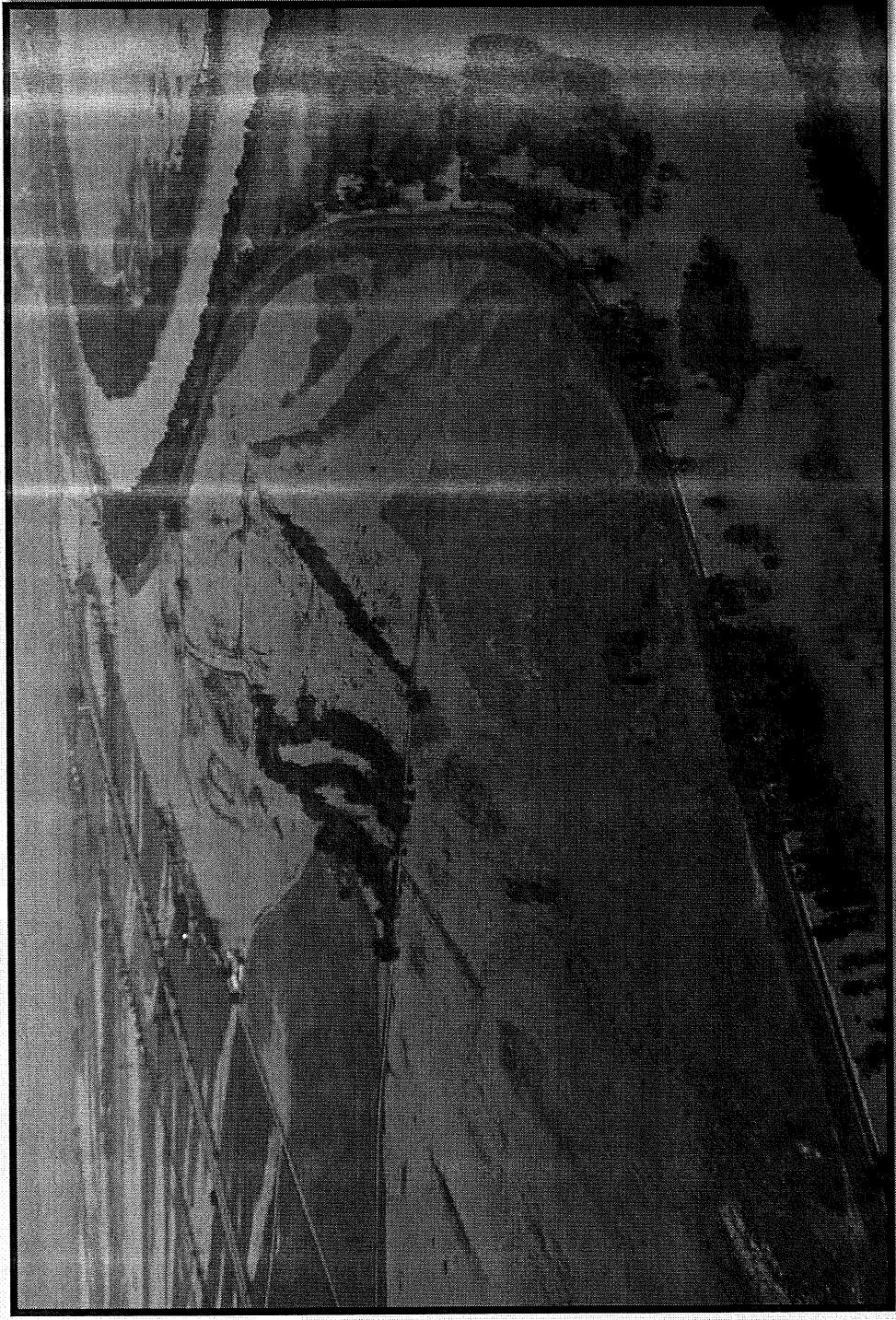
*6 to come off mute

Missouri River Project Office



*6 to come off mute

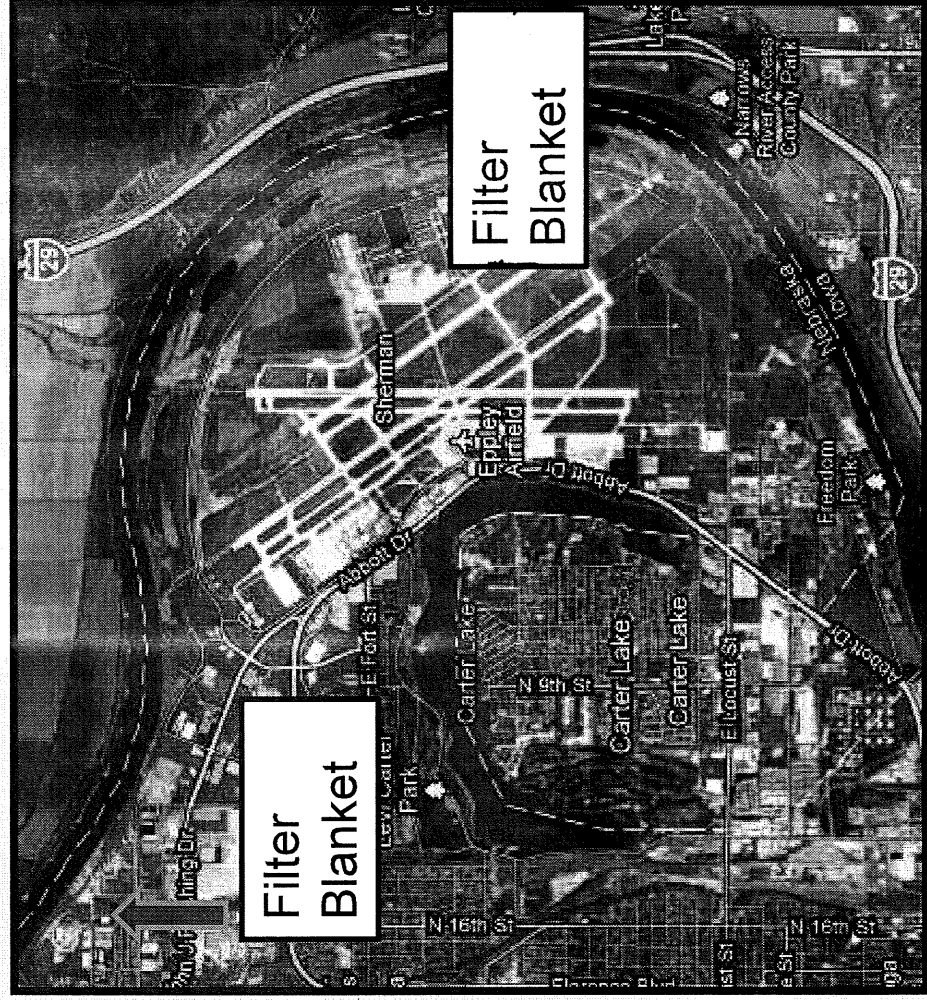
General Conditions



*6 to come off mute

Omaha - Missouri River RB

Inverted Filter Blankets
being installed by City of
Omaha at 3 Locations:
-Kinder Morgan
-South Section of Airport



*6 to come off mute

9

BUILDING STRONG®

Omaha - Missouri River RB

Area East of intersection

of Hickory and Cedar,

South of Union Pacific

Bridge has multiple

issues

-Remains an area of

concern and is being

closely monitored

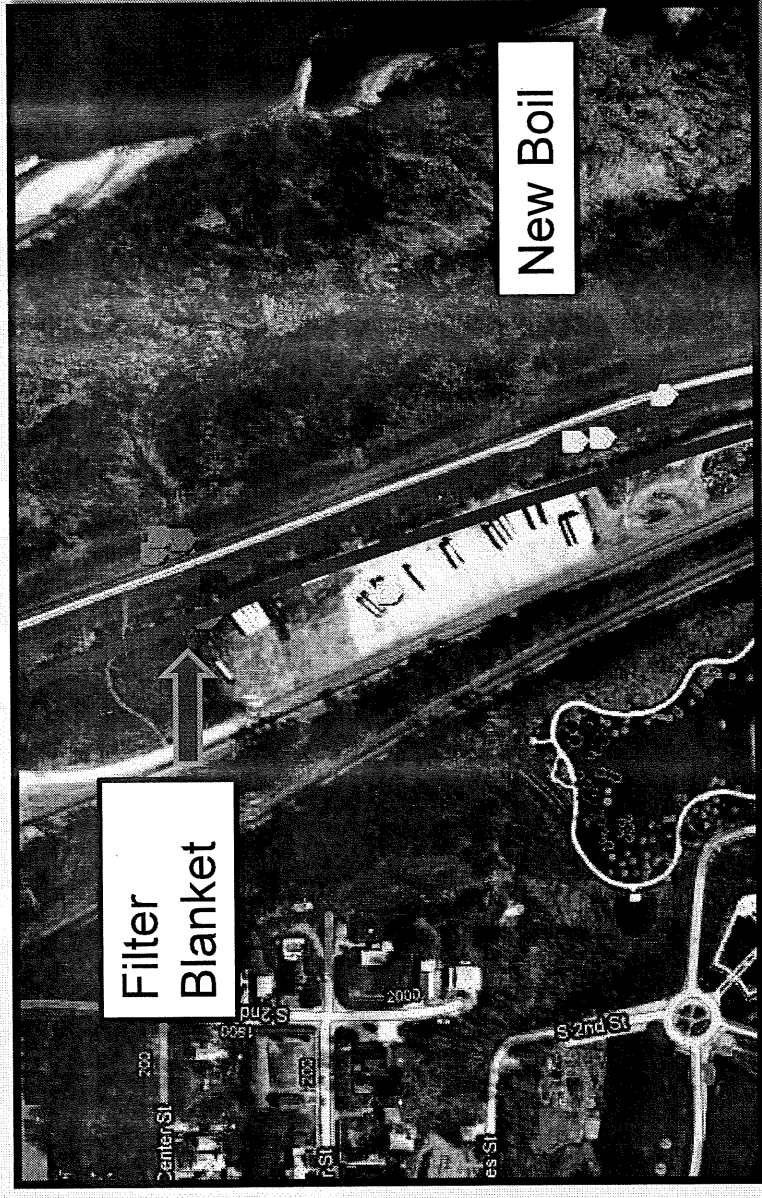
-New Boil Detected

Yesterday and Ringed by

Sponsor.

-City is Installing an

Inverted Filter.

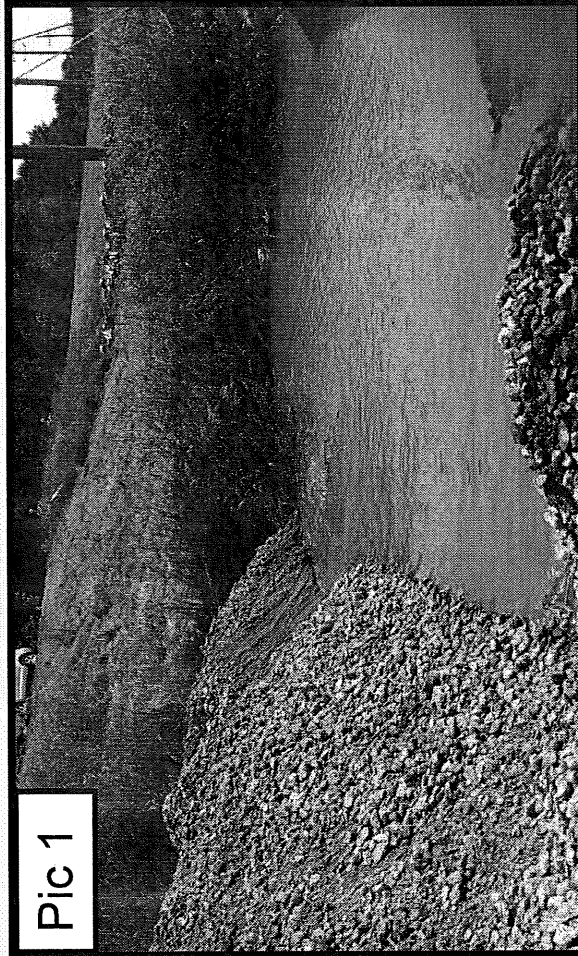


Omaha - Missouri River RB

Large Sink Hole
at Levee Toe near
Cyngenta Facility.
Possible shearing
of sewer causing
a sinkhole.
approx 35 feet
across. Approx $\frac{3}{4}$
Mile South of
I-80.



Omaha - Missouri River RB

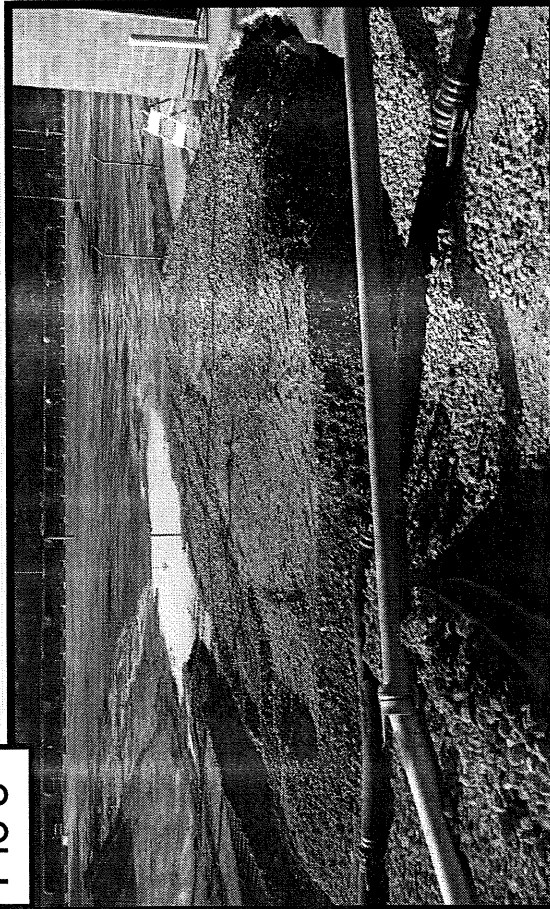


Pic 1



Pic 2

Pic 3



to come off mute

R-548 - Missouri River RB - Brownville

LD#2 Segment

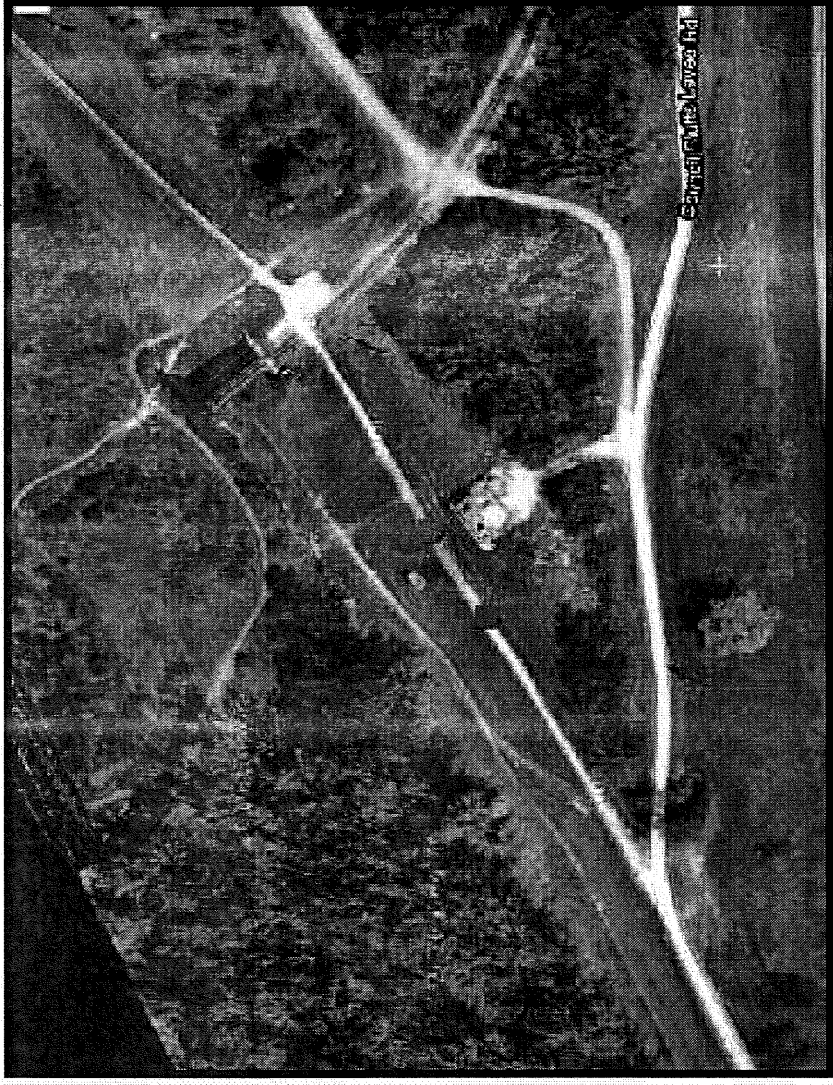
North of Cooper
Nuclear Plant.
Cloudy water
observed in direct
vicinity of drainage
structure sediment
can be seen rising in
plume, 2-3' of
standing water.
Also an animal
burrow. Upstream
water is clear.



*6 to come off mute

L-627 MO Riv LB & Indian Creek RB

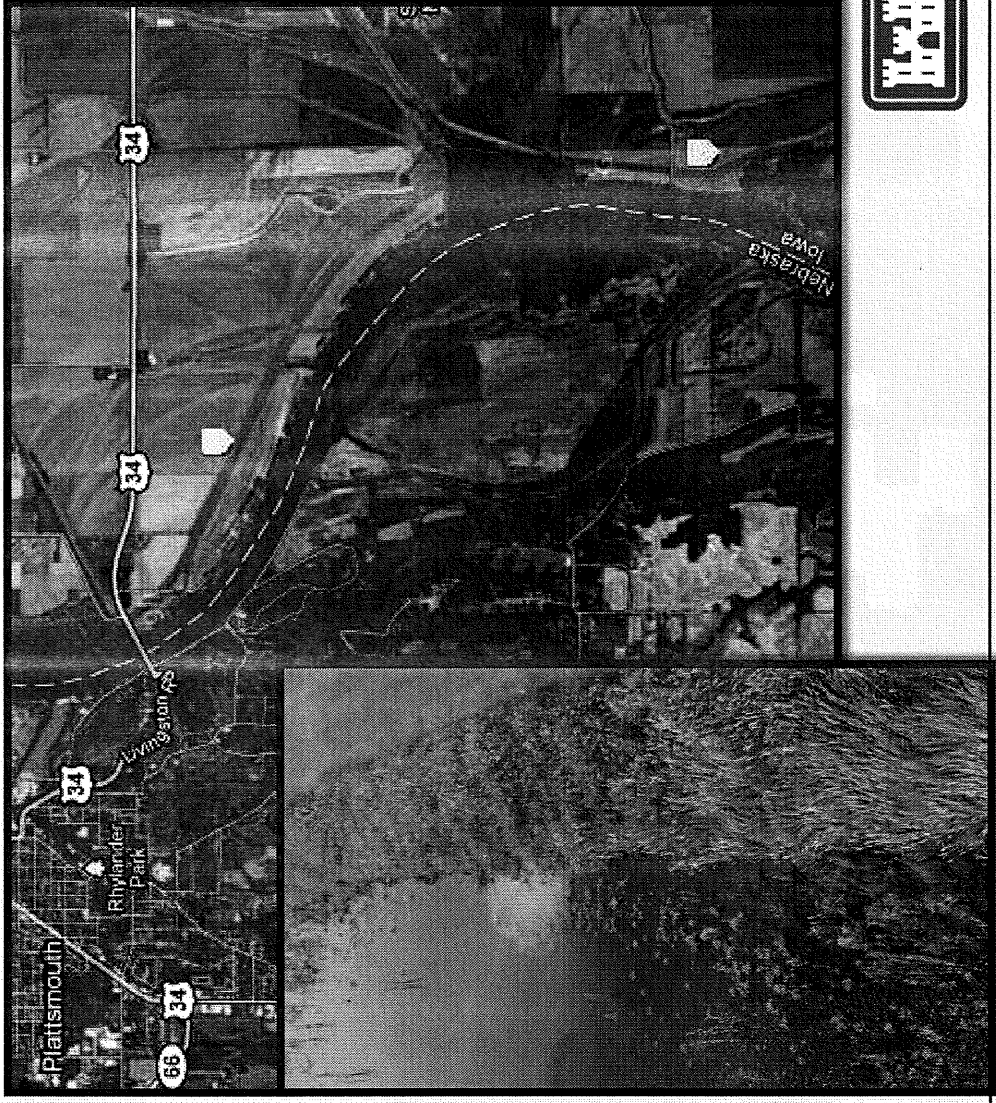
Council Bluffs
sinkhole
investigated
City was operating
pump at this
location.
A bypass pump is
being delivered
and they are
planning to plug
and inspect



L-601 - L-601 - MR LB - Miller-Sturgeon Segment

Flight identified
seepage at toe
of levee and
Sponsor has
been contacted

Piggyback
section
completed at
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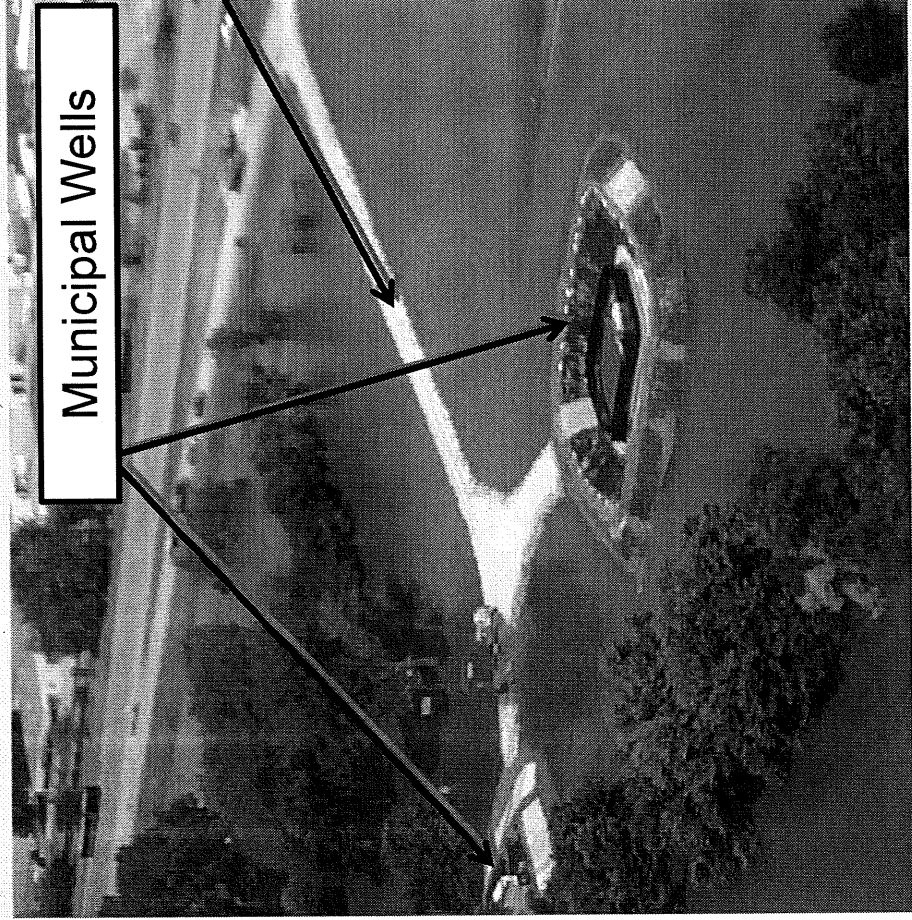


*6 to come off mute

BUILDING STRONG®

Iowa

Sioux City Municipal Wells/L601 Piggy-Back Levee



Municipal Wells

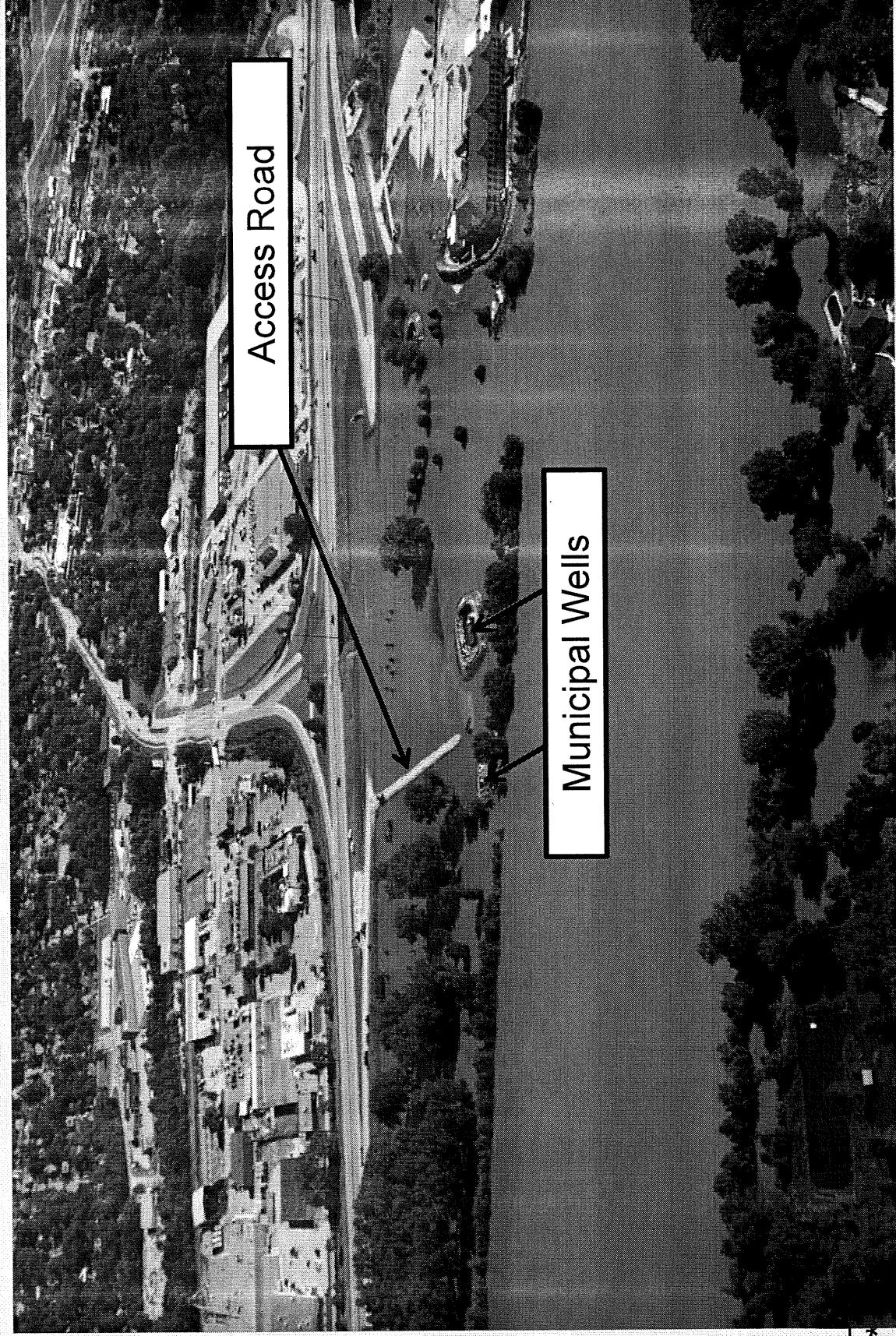
Access Road



L601 Piggy-Back Levee

*6 to come off mute

Iowa Sioux City Municipal Wells



Hamburg IA Levee Raise

Segment 1 Protected Side (looking north)



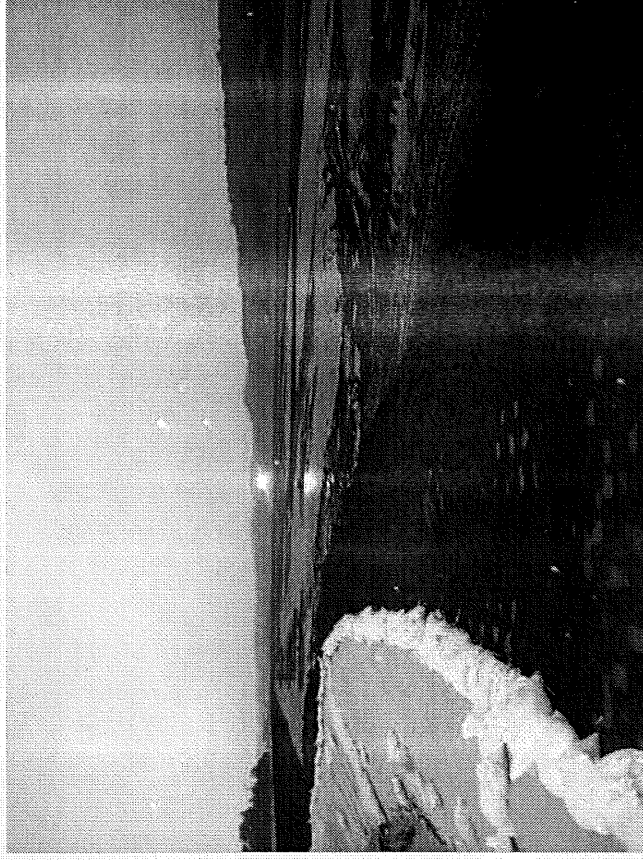
*6 to come off mute

Hamburg IA Levee Raise



17 June

Segment 1 Interior



18 June



*6 to come off mute

Hamburg IA Levee Raise

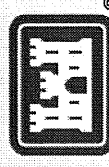
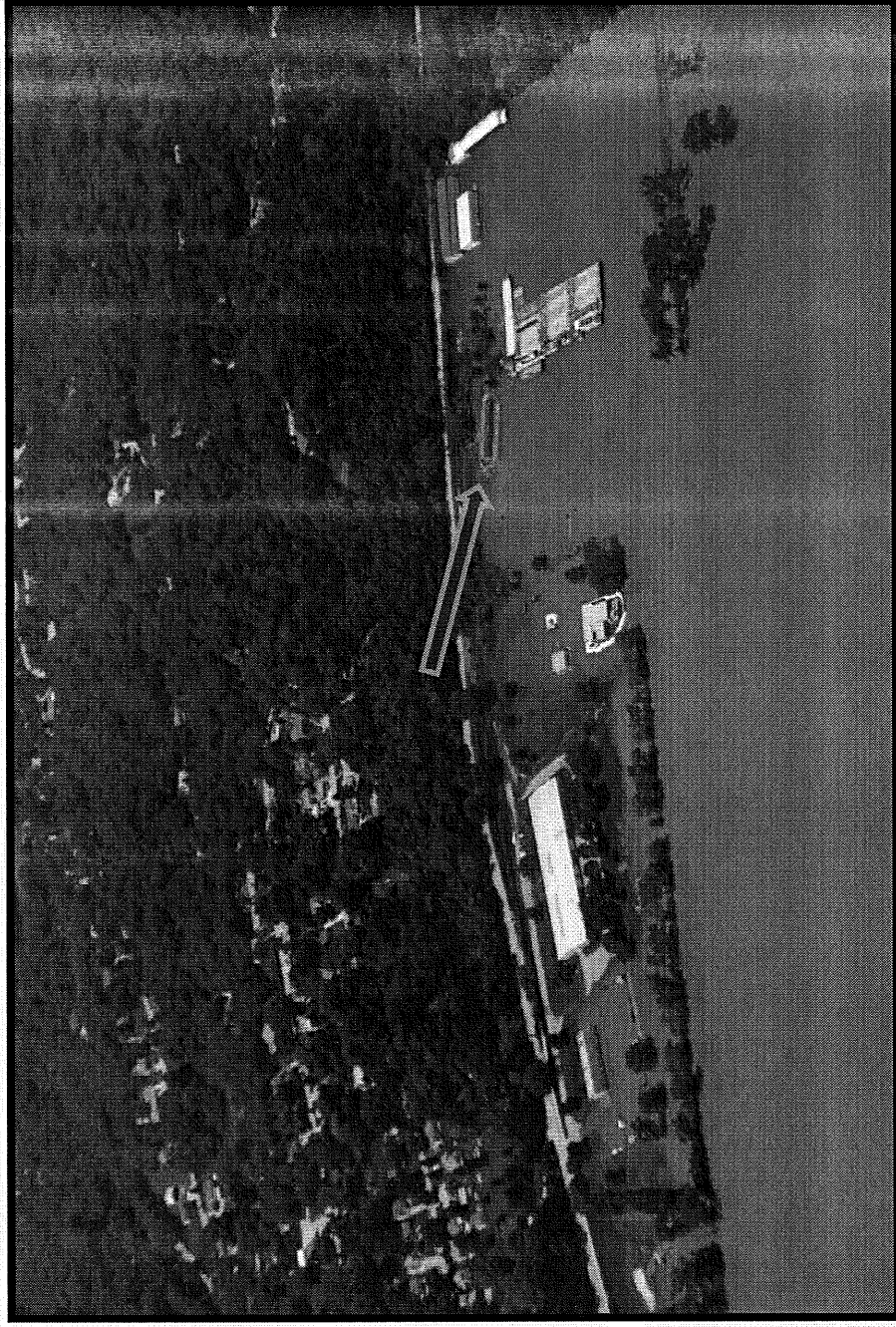


South RR Closure-City Completed



*6 to come off mute

Missouri River Project Office



*6 to come off mute

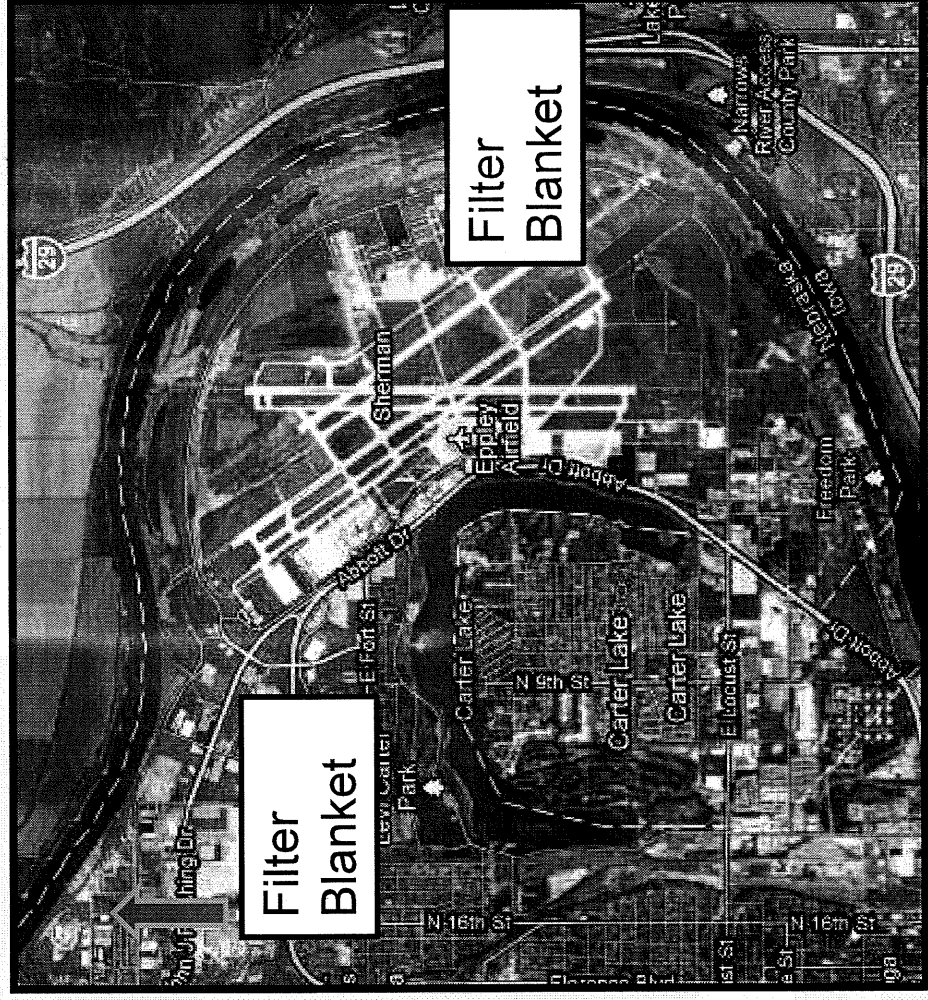
General Conditions



*6 to come off mute

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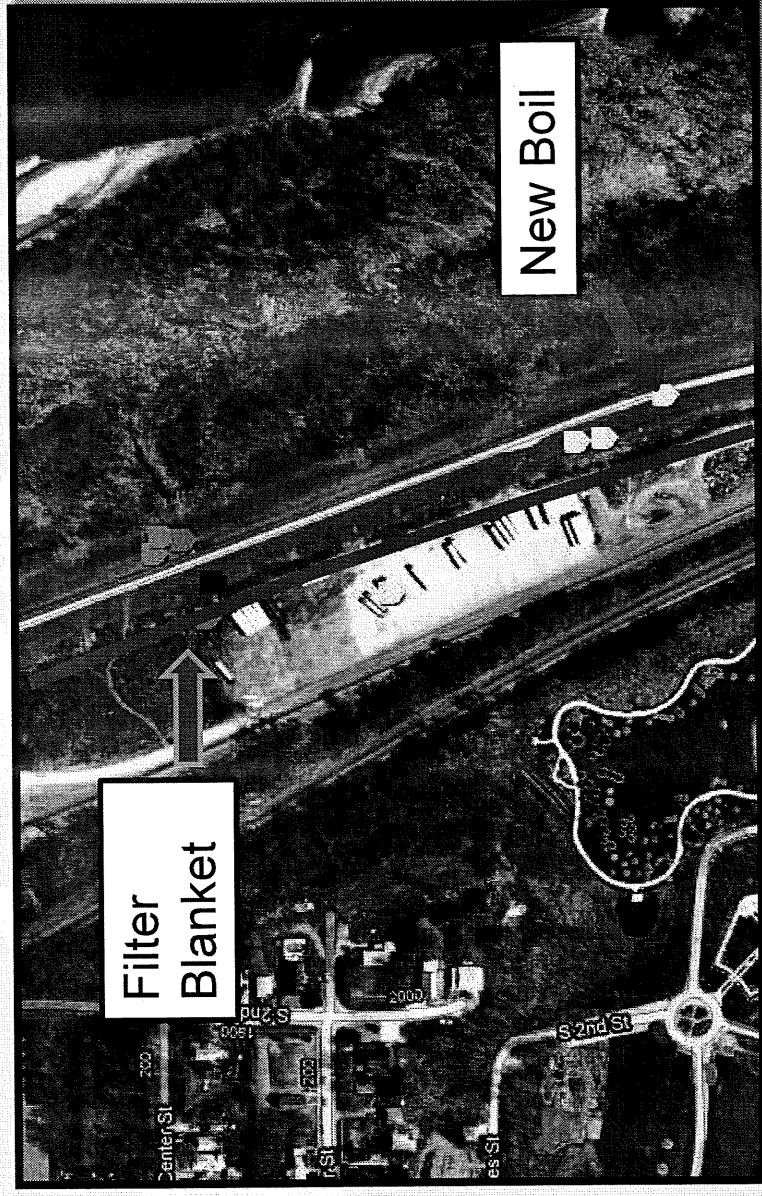


*6 to come off mute

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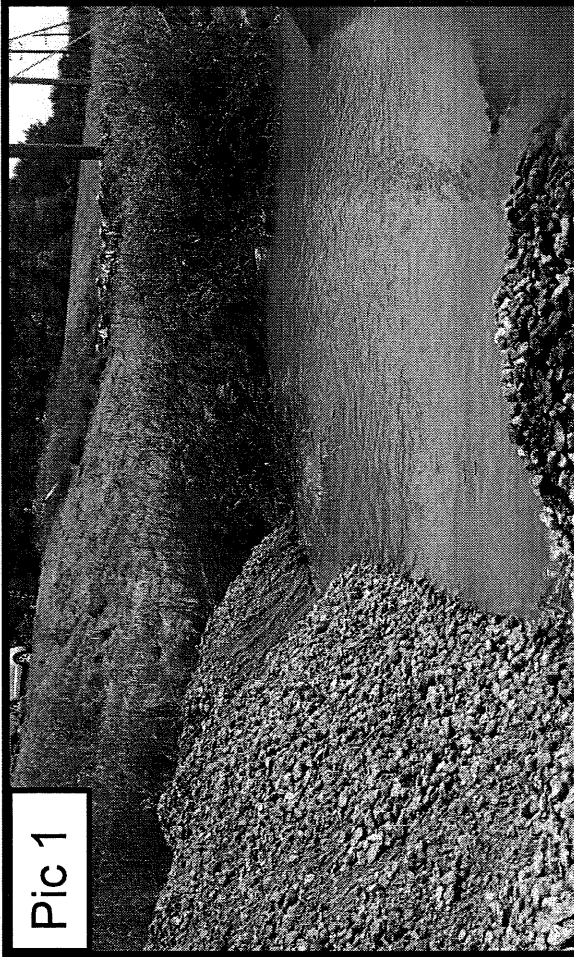
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approx 35 feet
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Mile South of
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Omaha - Missouri River RB

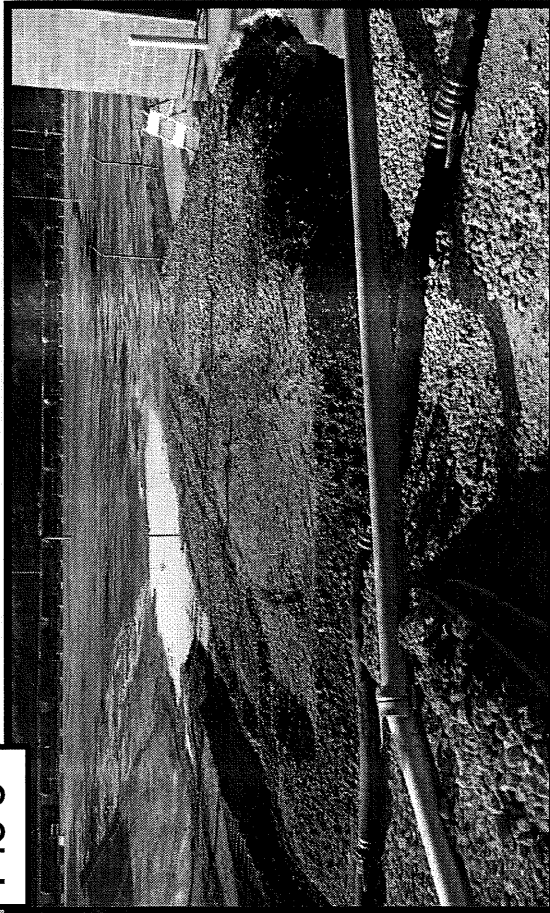
Pic 1



Pic 2



Pic 3



"6 to come off mute

12

BUILDING STRONG®

R-548 - Missouri River RB - Brownville

LD#2 Segment

North of Cooper
Nuclear Plant.
Cloudy water
observed in direct
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Also an animal
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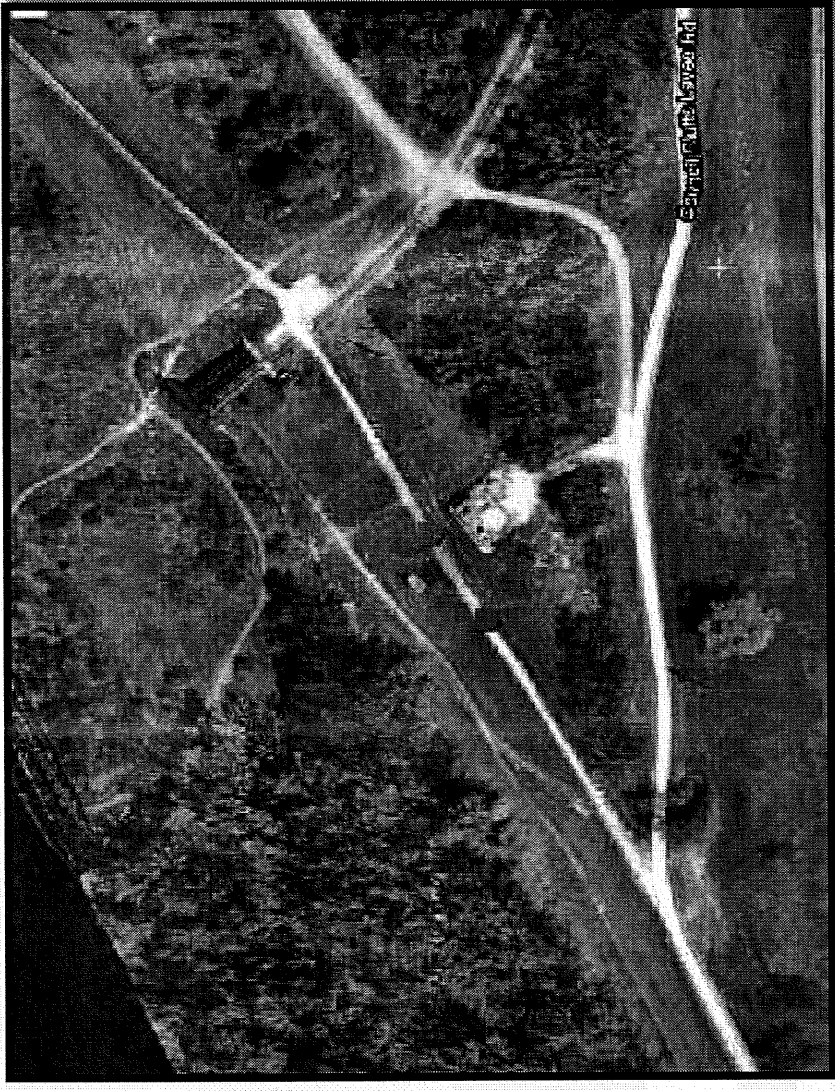
*6 to come off mute



BUILDING STRONG®

L-627 MO Riv LB & Indian Creek RB

Council Bluffs
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City was operating
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A bypass pump is
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and they are
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L-601 - L-601 - MR LB - Miller-Sturgeon Segment

Flight identified
seepage at toe
of levee and
Sponsor has
been contacted

Piggyback
section
completed at
another location



NWD 2011 Spring Flood / Tornado Response

Regional Battle Rhythm

Time (PST)	Time (CST)	Event	Lead	Notes	Information
0600 (M,W,F)	0800 (M,W,F)	HQSACE Conference Call	HQSACE	Update to HQSACE	
0630 (Daily)	0830 (Daily)	FEMA/NWD Morning Report			
0700 (Daily)	0900 (Daily)	Omaha Hydro/Weather Briefing			
0900	1100				
Currently Tue / Thur	Currently Tue/Thur	Columbia River Basin Executive Call	BG McMahon	CG discussion with District	Access: [REDACTED] Host: [REDACTED] Security: [REDACTED]
1030 (Daily)	1230 (Daily)	NWD Internal EOC Shift Update Brief		NWD EM Personnel	Access: [REDACTED] Security: [REDACTED]
1100 (Daily)	1300 (Daily)	NWO CMT Brief			Access: [REDACTED] Security: [REDACTED]
1200 (Daily)	1400 (Daily)	HQSACE Conference Call	HQSACE	Update to HQSACE	Access Code: [REDACTED]
1200 (Daily)	1400 (Daily)	NWK CMT Brief		Coord between (NWD,NWK,ESF3)	Access: [REDACTED] Security: [REDACTED]
1300 (Tues)	1500 (Tue)	Regional Water Operations Call		Regional discussion with BoR, BPA	Access Code: [REDACTED]
1300 (Thurs)	1500 (Thu)	Columbia River Basin WM Regional Call		Regional discussion with WM COP	Access Code: [REDACTED]
1400 (Daily)	1600 (Daily)	NWS CMT Briefing		Update to NWS Commander	Access Code: [REDACTED] Security: [REDACTED]
1430 (Daily)	1630 (Daily)	Missouri River Basin Executive Call	BG McMahon	CG Discussion with District	Access: [REDACTED] Host: [REDACTED] Security: [REDACTED]
1500 (Daily)	1700 (Daily)	Missouri River Basin Stakeholders Call	Erik Blechinger		Access: [REDACTED] Security: [REDACTED]
1600 (Daily)	1800 (Daily)	NWD Internal EOC Shift Update Brief		NWD EM Personnel	Access: [REDACTED] Host: [REDACTED] Security: [REDACTED]
1645 (Daily)	1845 (Daily)	Suspense to release all ENLink Taskers			
1800 (Daily)	2000 (Daily)	Columbia River Basin Stakeholders Call	As Needed	Placeholder for time if call is needed	Currently not being executed
1900 (Daily)	2100 (Daily)	Release all District SITREPS			
1900 (Daily)	2100 (Daily)	Write/Release NWD SITREP to HQ		SITREP on Joplin MO& Flooding	

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 6:01 PM
To: [REDACTED] VO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Ruch, Robert J COL NWO; Farhat, Jody S NWD02; Jordano, James J LTC NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: RE: Missouri River Aerial Photos - Platte River to Rulo - 20 June
Attachments: L- 550 Overtopping 2.JPG; L-536 Tieback Erosion 1.JPG; L-536 Tieback Erosion 2.JPG; L-550 Overtopping 1.jpg

So apparently some of you folks actually wanted to photos. Here they are this time. Sorry about that. Thanks, [REDACTED]

-----Original Message-----

From: [REDACTED] E NWO
Sent: Monday, June 20, 2011 5:51 PM
To: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] M NWO; Farhat, Jody S NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Ruch, Robert J COL NWO; Farhat, Jody S NWD02; Jordano, James J LTC NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: RE: Missouri River Aerial Photos - Platte River to Rulo - 20 June

Attached are 4 photos taken today of L-550 overtopping and L-536 tieback erosion.

Thanks, [REDACTED]

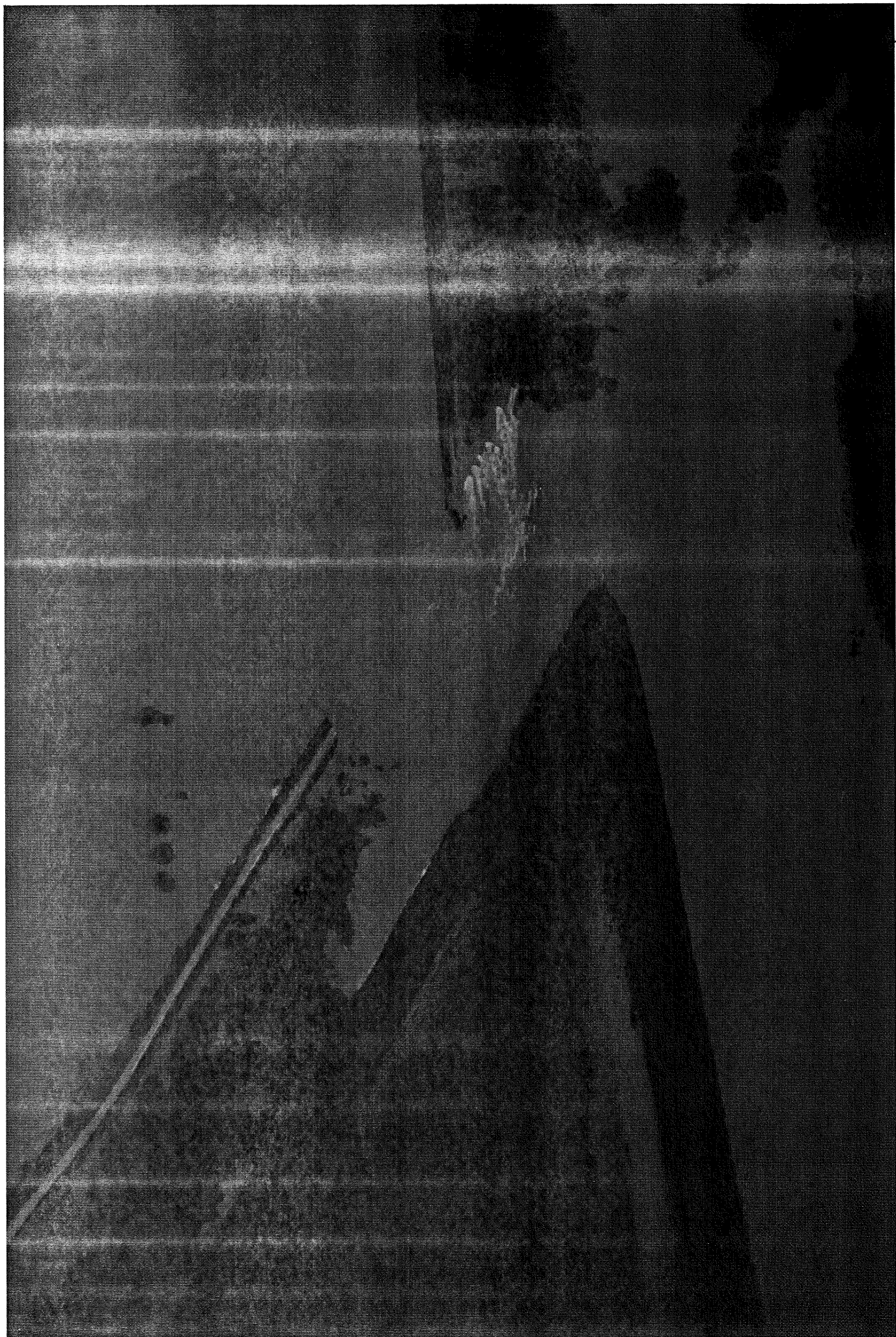
-----Original Message-----

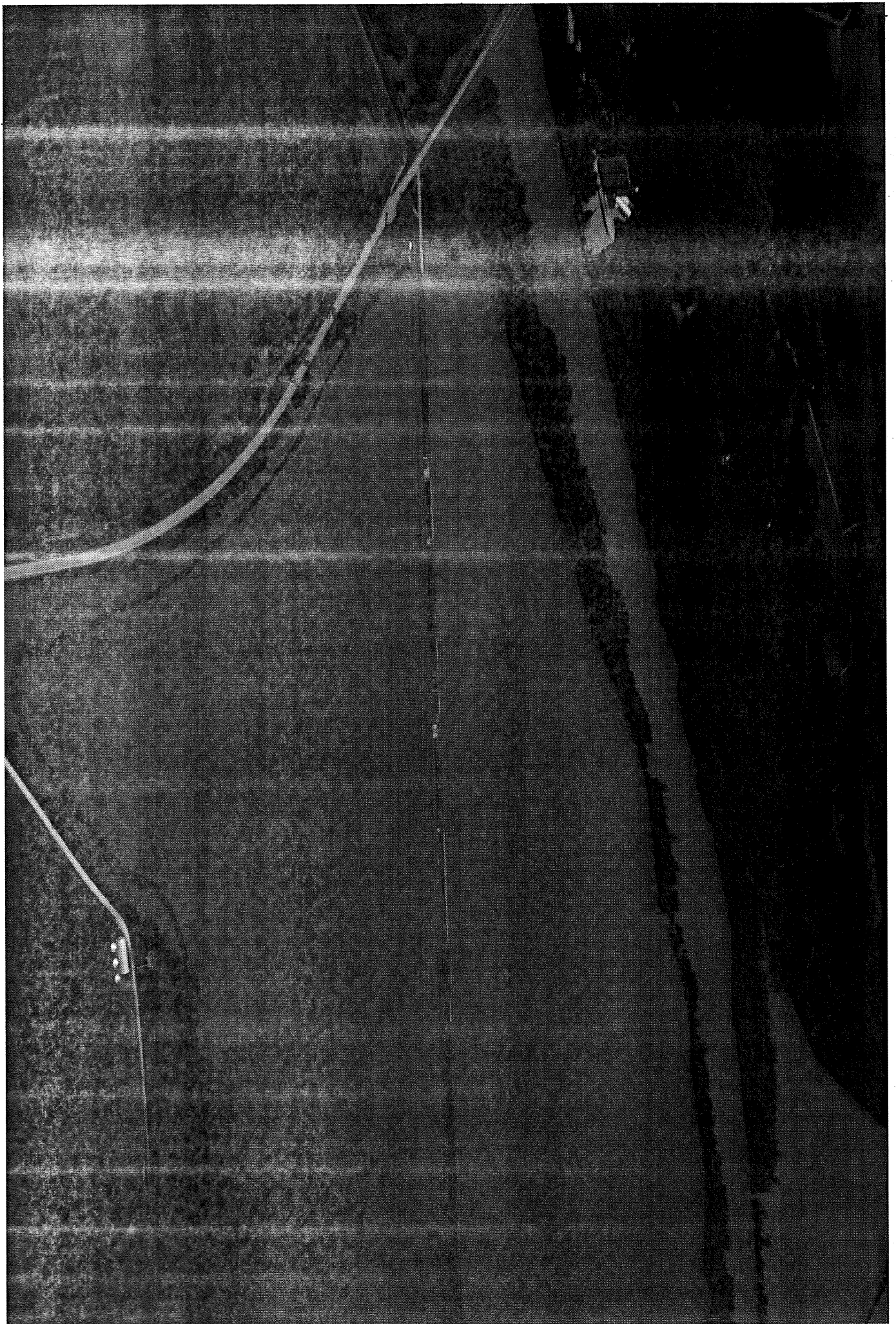
From: Temeyer, Timothy E NWO
Sent: Monday, June 20, 2011 4:22 PM
To: [REDACTED] E NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] NWO; [REDACTED] P NWO; [REDACTED] NWO; [REDACTED] NWO; Ruch, Robert J COL NWO; Farhat, Jody S NWD02; Jordano, James J LTC NWO
Cc: [REDACTED] NWO; Blechinger, Erik T NWO; [REDACTED] HQ@ NWO; Farmer, Monique L NWO; [REDACTED] NWO; Williamson, Eileen L NWO; [REDACTED] NWO
Subject: RE: Missouri River Aerial Photos - Platte River to Rulo - 20 June

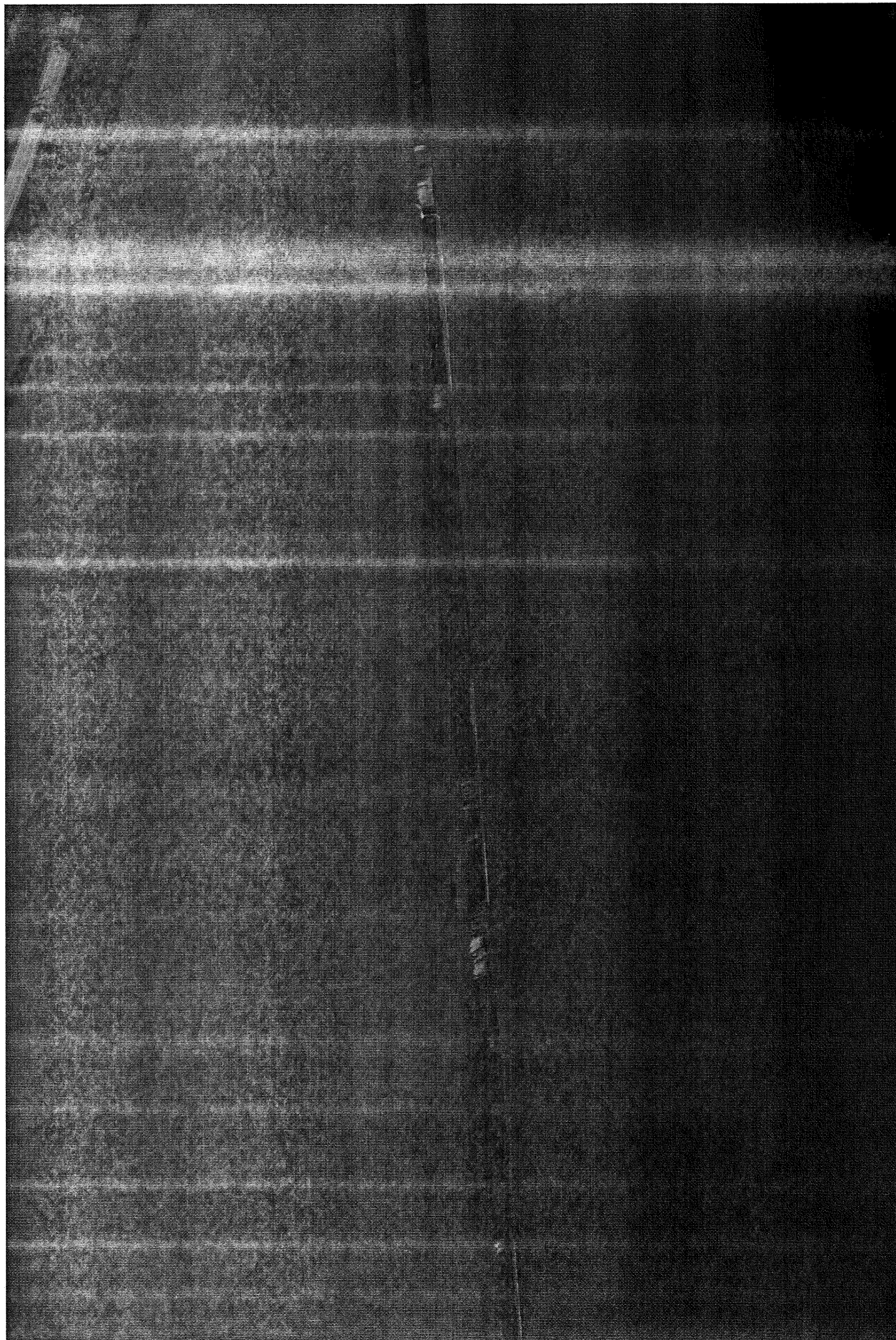
Missouri River aerial flood photos taken 20 June from Platte River to Rulo are located on branch shared drive at 2011_Flood/Missouri River Aerial Photos/Mo River Platte River to Rulo 20 June 2011. Later today I will put in directories by reach.

Thanks,

[REDACTED]
Hydraulic Engineer
Water Control & Water Quality Section
[REDACTED] (office)
[REDACTED] (cell)









[REDACTED] NWO

From: [REDACTED] NWK
Sent: Monday, June 20, 2011 5:55 PM
To: Farhat, Jody S NWD02
Subject: Pierre (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody;

Does that guy ever let up? You're doing great. Keep hanging tough!

Pierre

Record 25.35 ft on 04/10/1952

19.54 today

I'd say the system is providing quite a bit of reduction

[REDACTED]
Environmental Planner (Biologist) - USACE

Work: [REDACTED]
Cell: [REDACTED]
Fax: [REDACTED]
email: [REDACTED]@usace.army.mil

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: Hendee, David [David.Hendee@owh.com]
Sent: Monday, June 20, 2011 5:01 PM
To: Farhat, Jody S NWD02
Subject: RE: 1898 runoff slide (UNCLASSIFIED)

Got it. Thanks much.
David
444-1127

-----Original Message-----

From: Farhat, Jody S NWD02 [<mailto:Jody.S.Farhat@usace.army.mil>]
Sent: Monday, June 20, 2011 4:56 PM
To: Hendee, David
Subject: 1898 runoff slide (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

David,

Got your voice message. Attached is the slide depicting annual runoff in the Missouri River basin since 1898.

Let me know if I can be of further assistance.

VR,
Jody

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Monday, June 20, 2011 4:55 PM
To: Farhat, Jody S NWD02; McMahon, John R BG NWD; [REDACTED] NWD; Anderson, G Witt NWD; Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK; Blechinger, Erik T NWO; [REDACTED] NWD; [REDACTED] NWK; [REDACTED] NWK; Williamson, Eileen L NWO; Farmer, Monique L NWO; [REDACTED] HQ@ NWO; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] a NWD; [REDACTED] NWD02; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
[REDACTED] SAW
Cc: [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] Jr NWO; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02
Subject: RE: WM Talking Points for 20 June stakeholder call (UNCLASSIFIED)
Attachments: 2011 Missouri River Flood Talking Points 20 Jun 2011.docx

Classification: UNCLASSIFIED
Caveats: NONE

fyi

Classification: UNCLASSIFIED
Caveats: NONE

2011 Missouri River Flood Talking Points
Missouri River Water Management
20 June 2011

We posted the updated reservoir forecast on the web this afternoon. We continue to watch the rain over the Dakotas but for now the previously announced peak releases remain unchanged.

There were two minor changes to the release schedule. First, Fort Randall releases will be held at 143,000 cfs for one more day before we start stepping up; this is to manage the Gavins Point pool level. And second, the schedule shows reducing Fort Peck releases to 55,000 cfs late in the forecast period when that reservoir falls below the top of the exclusive zone. At that time, Garrison reservoir is forecast to still be in surcharge, so reducing Fort Peck releases will reduce inflow into Garrison a bit.

Releases for the 6 dams are as follows:

- Fort Peck –Releases were reduced to 60,000 today and will be held at that level as inflows continue to decline.
- Garrison – releases remain at 150,000 cfs
- Oahe and Big Bend –Releases from both projects remain at 160,000 cfs today, and will be held at that level.
- Fort Randall – releases will remain at 143,000 cfs today and tomorrow, gradually stepping up to the peak release of approximately 148,000 cfs with the schedule dependent on the Gavins Point pool level.
- Gavins Point – releases remain at 150,000 cfs.

The forecast is based on best available information at this time; actual releases are based on conditions on the ground. Peak releases are expected to continue well into August.

The mountain snowpack continues to decline.

Above Fort Peck: peaked at 141 percent of the normal peak accumulation, currently at 61%, down 57% from this year's peak

Fort Peck to Garrison: peaked at 136 percent of the normal peak accumulation, currently at 65%, down 52% from this year's peak

As of June 17

North Platte: peaked at 156 percent of the normal peak accumulation, currently at 54% (-65%)

South Platte: peaked at 150 percent of the normal peak accumulation, currently at 42% (-72%)

NWO

From: William Lay [wlay@socket.net]
Sent: Monday, June 20, 2011 4:52 PM
To: Farhat, Jody S NWD02
Subject: Master Manual

Dear Jody,

I would defy anyone to run the reservoirs in accordance with the master manual and come up with a different result.

Those who drafted the manual did not plan for 2011 event. I don't know if they planned for the Median Flow, but I couldn't get Dwaine off the Median Flow and onto the Maximum Flow. I am still on the Maximum flow kick, if we are going to get protection.

That you have run the reservoirs in accordance with the master manual seems to be the view of Colonel Ruch.

It is the master manual that needs some serious attention, maybe even some changes.

I am sure my fair and impartial views don't surprise you.

Bill Lay

[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Monday, June 20, 2011 4:44 PM
To: [REDACTED] NWD
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S
NWD02
Subject: Dam Safety Summary by [REDACTED] - Missouri River mainstem dams (UNCLASSIFIED)
Attachments: Missouri Mainstem Dam Status June 11.docx

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED], per your request - here is my personal summary of the dam safety issues on the Missouri River mainstem dams as of today.

To my knowledge the dams are performing well, and there are no unexpected instrumentation readings or evidence of distress.

This write up reflects my personal interpretations. Contents have not been coordinated with Omaha District, as staff are very busy.

I am cc'ing Omaha District staff, for their potential use.

Regards,
[REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

20 June 2011

Memorandum for NWD Dam Safety Officer ()

Subject: Summary of Dam Safety Observations / Potential Issues of Concern for Mainstem Missouri Dams.

1. The following paragraphs provided a summary of observations during the spring 2011 flood for the six mainstem Missouri River dams, as requested by () on 20 June 2011. Dam Safety flood response planning was initiated on 11 May 2011. Effort intensified on 26 May 2011 when updated forecasts identified record inflow conditions.

NOTE ; THIS INFORMATION REFLECTS THE PERSONAL OPINIONS OF THE NWD DAM SAFETY PROGRAM MANAGER, AND HAVE NOT BEEN VETTED / DISCUSSED WITH THE OMAHA DISTRICT TEAM WHO ARE BUSY WITH FLOOD FIGHTING AND DAM SURVEILLANCE.

2. Descriptions of Dam Safety observations :

2.1 Fort Peck Dam.

- Current Conditions (on 20 June 2011).
 - Reservoir Elevation = 2252.0 (Top of Spillway Gates = 2250)
 - Discharge = 65,500 cfs
 - Regulating Outlets are not used due to structural concerns.
- Dam Safety Observations to date.
 - No unusual instrumentation readings or evidence of distress have been noted. (24-7 Surveillance is ongoing.)
 - Loss of station power required temporary use of Generators for spillway operations. Now restored.
 - Spillway discharges have caused erosion along the east (left) wing wall. Initial repairs (adding riprap) were performed on 06 June. Additional riprap repairs are needed to protect the structure.
- Potential Areas of Concern.
 - Model study from 1996 indicated the potential for cavitation of rebounded floor slabs at discharges exceeding 25,000 cfs. Flow patterns along spillway are smooth, with no indication of cavitation to date.
 - If the reservoir reaches elev. 2255 (not anticipated), the flood tunnel ring gates will be overtopped, causing undesired flow through the outlet works.

2.2 Garrison Dam.

- a. Current Conditions (on 20 June 2011).
 - Reservoir Elevation = 1853.9 (Top of Spillway Gates = 1854)
 - Discharge = 150,000 cfs
 - Both spillway and regulating tunnels are in use.

b. Dam Safety Observations to date.

- No unusual instrumentation readings or evidence of distress have been noted. (24-7 Surveillance was reduced to 20 hour surveillance two weeks ago. Will return to 24-7 in late June.)
- Relief well channel partially inundated, limits monitoring.
- Following initial spillway releases, "rooster tails were noted along a row of downstream slab joints. Flows diverted and eroded joints were successfully patched.
- Regulating outlet tunnel releases are turbulent, causing erosion along both tailrace banks. The east (left) bank erosion endangers the switchyard. The west (right) bank erosion endangers a critical access road and adjacent west powerhouse slope. USBR crews performed repairs using available emergency riprap stockpiles (good rock). Intermittent erosion continues, due to fluctuating outlet tunnel discharges in response to hydropower requirements. A Contract will be issued today to add riprap further downstream. A Contract has been awarded to replace depleted riprap stockpiles.
- Williston Levees have experienced long duration record stages. 24-hour surveillance has been occurring for about 3 weeks. Numerous boils have been identified, at locations different from the previous (1996) high pool observations. Generally boils are flowing clear. Sandbag rings have been added to stabilize boils. One large boil was discharging fines. An inverted filter was constructed and Omaha District drill crews installed 3 new relief wells. The boil is currently stable. Access for placing rock is a problem, as the landward toe road is too soft for transporting material. A Contractor is currently placing gravel atop the toe road, to aid response actions.

c. Potential Areas of Concern.

- An historic shallow movement area exists along the upstream embankment slope, approximately between stations 60+00 to 90+00. The movement is attributed to low plasticity clays beneath the riprap and movement is continuing at historic rates. If movements accelerate, repairs may be necessary to protect the crest.
- Cavitation damage to the regulating outlet tunnels occurred in 1996. It is unknown if patches have held up during the current flood releases. Recommend diverting flows to the spillway and inspecting the tunnels. Project personnel are pursuing a crane contract to place stoplogs for emergency inspection. However, high tailwater will restrict viewing. (This is a contingency plan that will not be immediately implemented.)
- Stilling basin erosion is a concern. Riprap from the eroded channel bank is likely to cause ball milling to the concrete structures. Recommend stilling basin inspections as a post flood action.
- Lignite seams are present along the east abutment and beneath the spillway. The lignite is more pervious than surrounding soils, and serves as seepage pathways.
- Outlet tunnel gate reliability is a concern given the numerous gate changes. It is unknown if the gates were designed for current dynamic operations. Some Operations personnel would like to add remote controls to the gates to aid Operators. Need to comply with EC 1110-2-6071, which requires Commander's approval.

2.3 Oahe Dam.

a. Current Conditions (on 20 June 2011).

- Reservoir Elevation = 1618.5 (Top of Spillway Gates =1620)

- Discharge = 160,000 cfs
 - Regulating tunnels are in use.
- b. Dam Safety Observations to date.
- No unusual instrumentation readings or evidence of distress have been noted in the historic Station 61+00 historic foundation movement area. (24-7 Surveillance is ongoing.)
 - NWD is not aware of bank erosion along the tailrace/ outlet channel; though it is likely damage has occurred.
- c. Potential Areas of Concern.
- Stability of the historic Station 61+00 movement area merits aggressive monitoring. This area is "less reliable" than the rest of the embankment. The 2001 Expert Panel concluded that this zone is stable up to a reservoir elevation of 1620. However, the 2001 panel members recommended conducting additional materials testing and stability analyses, which have not been completed. In 2010 new shear strength tests were performed and data was reviewed by Dr. Bradley from Virginia Tech. The evaluation determined that the clay shale foundation strengths are less (3 degrees versus 8 degrees) than used for the 2001 stability analysis. Over the last ten years numerous vertical drains have been added in the vicinity of Station 61+00 to help relieve foundation pressures. This is the first test of this drain system.
 - Stilling basin erosion is a concern. Riprap from the eroded channel bank is likely to cause ball milling to the concrete structures. Recommend stilling basin inspections as a post flood action.
 - Spillway erosion. If inflow conditions exceed the combined outlet tunnel and powerhouse capacity of 165,000 cfs, it may be necessary to use the spillway. The Oahe spillway channel is unlined and sited in weak material. Significant erosion would occur, as well as damage to downstream infrastructure that could impede access to the dam.

2.4 Big Bend Dam.

- a. Current Conditions (on 20 June 2011).
- Reservoir Elevation = 1419.4 (Top of Spillway Gates =1423)
 - Discharge = 160,000 cfs
 - Spillway is in use, no regulating outlet tunnels.
- b. Dam Safety Observations to date.
- No unusual instrumentation readings or evidence of distress have been noted.
 - This is the first time this spillway has been used. No problems reported to date.
 - Spillway bank erosion was repaired on 11 June.
 - Relief well channel inundated, limits monitoring.
- c. Potential Areas of Concern.

- None at this time. Big Bend is a re-regulation dam for Oahe, with minor pool fluctuations.

2.5 Fort Randall Dam.

- a. Current Conditions (on 20 June 2011).
 - Reservoir Elevation = 1365.1 (Top of Spillway Gates =1375)
 - Discharge = 145,000 cfs
 - Regulating tunnels are not in use for flood control. One tunnel gate was modified for fine regulation. Preference is to use spillway.
- b. Dam Safety Observations to date.
 - No unusual instrumentation readings or evidence of distress have been noted.
 - Following initial spillway use for this event, flows from the spillway entered the west (right) spillway wall drains. Backflow exceeded the wall drain capacity, flowed into the permeable fill behind the walls, and migrated to the bottom of the stilling basin. This caused approximately 8 feet of vertical subsidence of the fill near the bottom of the stilling basin, and undermined the sidewalk slabs. Flows were diverted to the other side of the spillway temporarily for evaluation. The wall drains were plugged, backfill replaced and piezometers installed along the spillway. Flows were diverted to the outlet tunnels and leftover patch material from Garrison was used to repairs areas with slab erosion at the same time. Similar backflow through the wall drains occurred on the east (left) abutment when the flows were shifted to that side. Currently discharges are limited to the center spillway bays.
- b. Potential Areas of Concern.
 - Updated forecast indicates past record pool of 1372.2 will be matched in mid July, triggering 24-7 surveillance.

2.6 Gavins Point Dam.

- a. Current Conditions (on 20 June 2011).
 - Reservoir Elevation = 1207.6 (Top of Spillway Gates =1210)
 - Discharge = 150,000 cfs
 - Spillway is in use, no regulating outlet tunnels.
- b. Dam Safety Observations to date.
 - No unusual instrumentation readings or evidence of distress have been noted.
 - Added riprap to downstream channel due to bank erosion.
- c. Potential Areas of Concern.
 - None at this time. The previous record pool of 1209.7 occurred in 2010. Do not anticipate reaching pools levels that will trigger 24-7 surveillance.

[REDACTED] NWO

From: [REDACTED] E NWO
Sent: Monday, June 20, 2011 4:22 PM
To: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] K NWO; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED]
L NWO; [REDACTED] S NWO; [REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
Cc: Ruch, Robert J COL NWO; Farhat, Jody S NWD02; Jordano, James J LTC NWO
[REDACTED] NWO; Blechinger, Erik T NWO; Johnston, Paul T HQ@ NWO; Farmer,
Monique L NWO; [REDACTED] NWO; Williamson, Eileen L NWO; [REDACTED] NWO
Subject: RE: Missouri River Aerial Photos - Platte River to Rulo - 20 June

Missouri River aerial flood photos taken 20 June from Platte River to Rulo are located on branch shared drive at 2011_Flood/Missouri River Aerial Photos/Mo River Platte River to Rulo 20 June 2011. Later today I will put in directories by reach.

Thanks,

[REDACTED]
Hydraulic Engineer
Water Control & Water Quality Section
[REDACTED] (office)
[REDACTED] (cell)

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 4:00 PM
To: [REDACTED] NWO; [REDACTED] NWO; Thomas, Kimberly S NWO; Farhat, Jody S NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] Jr NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Flood Report #18 - Fprt Peck (UNCLASSIFIED)
Attachments: Fort Peck Dam Surveillance Activities 19 June 11.docx; StandingWave2_19june2011.pdf

Classification: UNCLASSIFIED
Caveats: NONE

Releases from Fort Peck were decreased from 65,000 cfs to 60,000 cfs today with 47,000 cfs through the spillway and 13,000 cfs through the power plant. Fort Peck's pool elevation was 2252.01 this morning. Our 24 hour surveillance continues with no issues on the dam or spillway.

I have attached [REDACTED] surveillance report with [REDACTED] plot of the standing wave on the spillway.

[REDACTED], P.E.
U.S. Army Corps of Engineers
Operations Project Manager
Fort Peck Project
Fort Peck, Montana 59223
PH: [REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

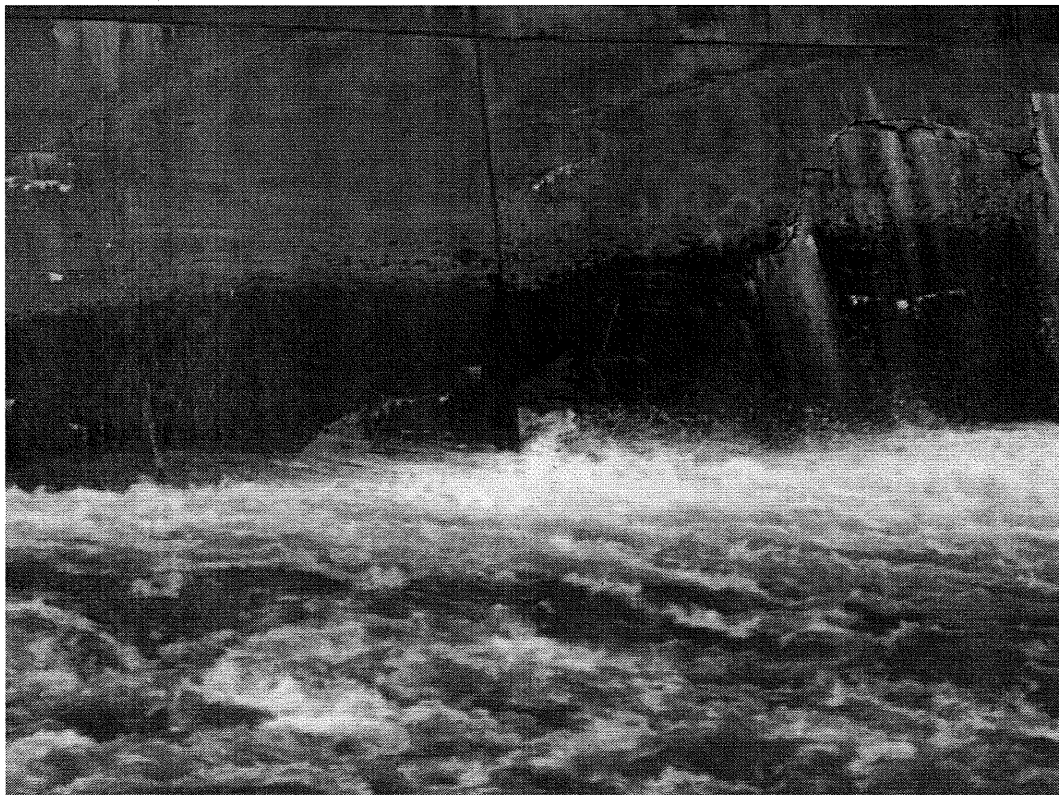
**Fort Peck Dam
High Reservoir Surveillance Activities
19 June 2011**

- Reservoir Elevation: 2252.10 as of 2400.
- Project Releases: 52,010 cfs from spillway and 13,370 cfs from the powerhouse as of 0100.
- Coulee Inspection:
 - Coulees D and E: No change. There are large areas where the ground is saturated with standing water. The roadway was dry.
 - Coulee A: No change. The coulee was dry.
 - Coulee B: Inspected with no signs of seepage, boils, or other concerns. The lower reaches of the coulee were muddy.
 - Coulee C: The area between MH#9 and MH#8, where the boil previously existed, was muddy, no flow. Starting at approximately 100-feet downstream of MH#9, the ditch on the side of the roadway was wet. Further downstream in the ditch a trickle flow was present. This flow is either from seepage bypassing RW#9 or possibly from precipitation exiting the adjacent slope, or a combination of both.
- Upstream Slope: The riprap and the upstream slope remains unchanged. The upstream slope is in good condition with no erosion or riprap displacement identified.
- Embankment Toe and Relief Well Area:
 - The embankment toe area and the area between the rock toe and the relief channel was inspected. There was no seepage or other conditions of concern identified.
 - Relief Well Channel: The water in the relief well channel was clear.
 - RW-piezometer 57.5/18.1 had been leaking water through the shut-off valve during times the Range 19.5 and 20 RW-PZ's were shut down for readings. A new gate-valve was installed on 19 June.
- Dike Section:
 - The seepage area at Station 95 – 100 was wet in the ditch at the dike section toe. This area has been well documented in past inspection reports and appears to fluctuate slightly with precipitation runoff, but is basically unchanged.
 - Station 115: Essentially, there was no change since flags were placed in this area on 5 June. Wet, saturated soil with little flow.
 - Station 162: No change.
 - Station 169: No change. Standing water. Trickle flow.

Fort Peck Dam
High Reservoir Surveillance Activities
19 June 2011

- Right Abutment Area: Both of the two seepage areas were wet with saturated soil. There was standing water at both locations and evidence of some recent flows. The size of the areas and the apparent flows are typical of what has been seen following rainfall events.
- Spillway:
 - Riprap was placed along both sides of the spillway upstream approach channel walls on 3 June 2011 due to erosion that was taking place from high wave action. s, in response to erosion during a were inspected, no noticeable damage or changes
 - Both sides of spillway were walked to evaluate a standing wave that begins at approximately Station 16+00 on the right, goes across to approx. Station 24+00 on the left, then back to 32+00 on the right.
 - Measurements were taken of spillway wall tilt from Station 5+00 to 47+00 using a 4' level set at base of wall, then measuring offset from top of wall to level.
 - Attachment 1 summarizes standing wave location and wall tilt measurement.
 - Noted deteriorated concrete with exposed rebar on left spillway wall at approx. Station 34+00. (see photo 1)

Photo 1



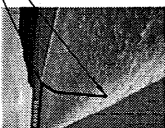
**Fort Peck Dam
High Reservoir Surveillance Activities
19 June 2011**

- Noted large slide had occurred near right spillway wingwall. Large chunks of Bearpaw shale now acting as riprap. See photo 2 (note 4' lathe in water for scale)

Photo 2



- Instrumentation Readings Obtained on 19 June:
 - Relief Well Flows
 - Left Abutment Relief Wells
 - Selected Seepage Pipes
 - Read twice, (at 1700 and 1900) East, West and Coulee "D" Flumes, and Toe Drain Weir Box.
 - Range 18.1, 19.5, and 20 relief well piezometers.
 - Downstream water table piezometers.

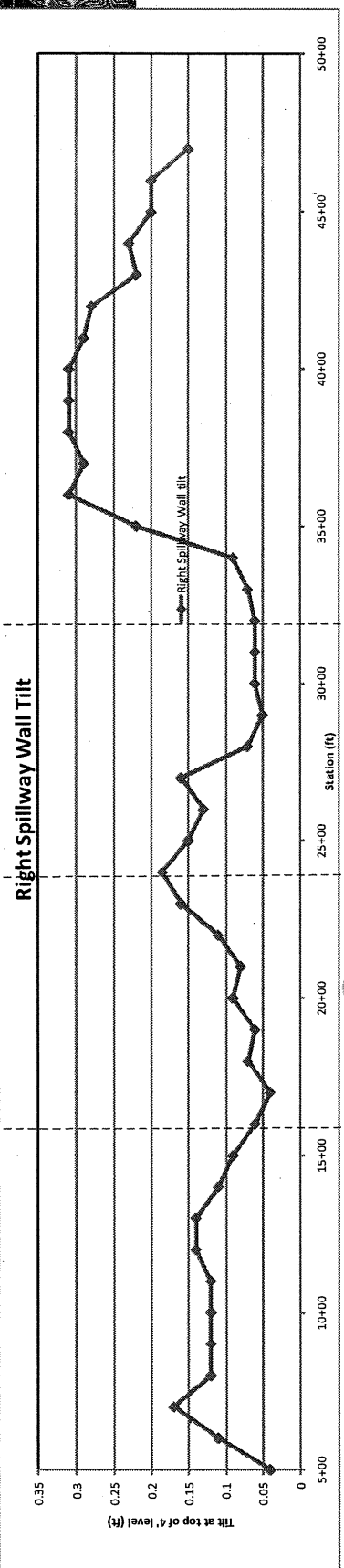
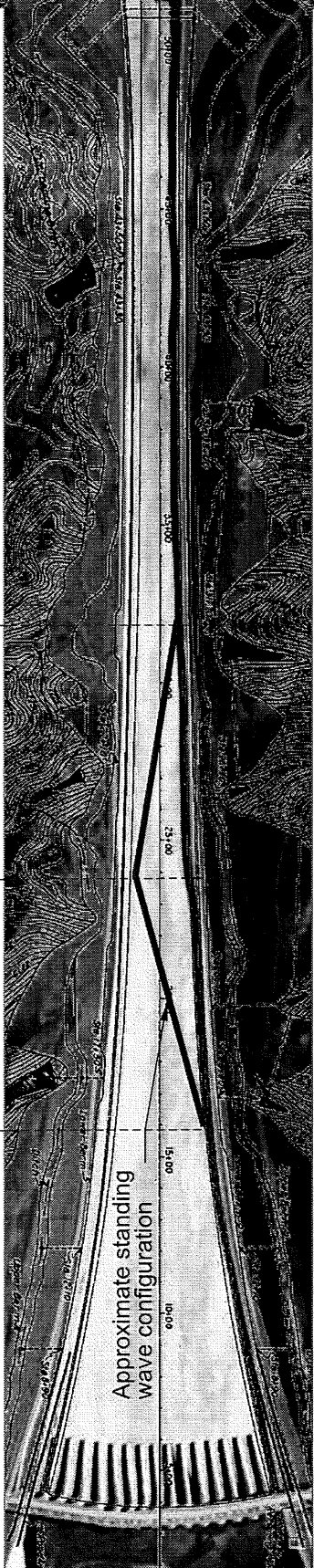
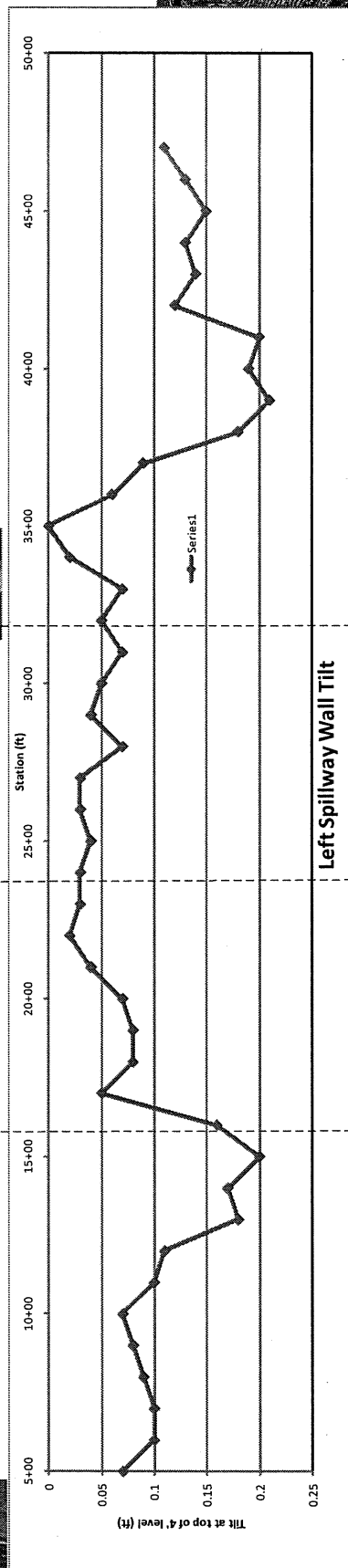


Approx. station 16+00

Approx. station 24+00

Approx. station 24+00

Approx. station 32+00



[REDACTED] NWO

From: Blechinger, Erik T NWO
Sent: Monday, June 20, 2011 2:25 PM
To: Streckfuss, Ted H NWO; [REDACTED] NWO; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWK; Anderson, G Witt NWD; [REDACTED] NWO; [REDACTED] NWO
Cc: [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: RE: MRRIC Meeting Go/No Go Decision Discussion RESPONSE REQUESTED (UNCLASSIFIED)

I am with Ted and will be there.

-----Original Message-----

From: Streckfuss, Ted H NWO
Sent: Monday, June 20, 2011 10:15 AM
To: [REDACTED]; Blechinger, Erik T NWO; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWK; Anderson, G Witt NWD; [REDACTED] NWO; [REDACTED] NWO
Cc: [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: RE: MRRIC Meeting Go/No Go Decision Discussion RESPONSE REQUESTED (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Be an opportunity to sensitize the members about flooding impacts on the system, and begin to evaluate this event as a data point with its own set of outcomes. I recommend forge ahead on the meeting.

V/R
Ted

-----Original Message-----

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 8:51 AM
To: Blechinger, Erik T NWO; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWK; Anderson, G Witt NWD; Wiehl, [REDACTED] NWO; [REDACTED] NWO
Cc: [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: MRRIC Meeting Go/No Go Decision Discussion RESPONSE REQUESTED (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED

Caveats: NONE

DOES THE CORPS, AS A LEAD AGENCY, STILL SUPPORT HOLDING THE 26-28 JULY MRRIC MEETING IN GREAT FALLS, MT?

The MRRIC Leadership and Facilitation team and agency leads are having a discussion this afternoon at 3 central time regarding whether or not to hold the 26-28 July meeting in Great Falls, MT.

The Corps' response has been that we will be able to support a meeting, although we may have a reduced support staff. Has this position changed?

It appears likely that there will not be enough stakeholder members in attendance to constitute a quorum for decision making. Is this reason enough to call off the meeting? Or is there still value to holding it, primarily as information sharing? The only topic for consensus determination currently on the agenda is the final consensus on recommendation for the FY2012 MRRP Work Plan.

If anyone would like to participate in the call, let me know and I'll forward the call-in information.

Appreciate your guidance,

[REDACTED], PE, PMP
Project Manager for the Missouri River
Recovery Implementation Committee (MRRIC) CENWO-PM-AC US Army Corps of Engineers, Omaha
District
1616 Capitol Avenue
Omaha, NE 68102-4901
Office: [REDACTED]
Mobile: [REDACTED]
Fax: [REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: MRJIC
Sent: Monday, June 20, 2011 2:16 PM
Subject: Missouri River Joint Information Center Call 5 p.m. (CDT) ***Original Number Still Being Used***

ORIGINAL CALL NUMBER STILL BEING USED

Reminder: The daily call will occur at 1700hrs/CT. Call in information is as follows:

Access Code: [REDACTED]
Security Code: [REDACTED]

This call is intended for Congressional Delegation, Tribes, State Government, Local Government, and Press. Please do not distribute the number to the general public, the JIC is set up with email and call in accessibility to answer questions for the general public.

General format includes updates from the Hydrometeorological Center (HPC), Iowa Department of Transportation, Missouri Department of Transportation, Nebraska Department of Transportation, the Missouri River Basin Water Management Division, USACE Omaha District Emergency Operations Center, USACE Kansas City District Emergency Operations, followed by a Questions and Answer opportunity.

To listen to the previous recordings, please visit our website.
<http://www.nwo.usace.army.mil/html/op-e/flood2011/pressconf_arch.html>

For bios of USACE staff on 5 p.m. call, please visit our website.
<http://www.nwo.usace.army.mil/html/op-e/flood2011/Flood_Press_Packet_Jun_2011_QR.pdf>

Thank you.

MRJIC

NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 1:54 PM
To: Farhat, Jody S NWD02
Subject: RE: Request for Interview KTRS Radio, St. Louis (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Thanks, Jodi.

[REDACTED]
Public Affairs Specialist
U.S. Army Corps of Engineers Omaha District
Office: [REDACTED]
Cell: [REDACTED]
www.nwo.usace.army.mil

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Monday, June 20, 2011 1:46 PM
To: [REDACTED] NWO
Subject: RE: Request for Interview KTRS Radio, St. Louis (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Being a St Louis Station, you might see if COL Hofmann or [REDACTED] could handle it.

Jody

-----Original Message-----

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 12:27 PM
To: Farhat, Jody S NWD02
Subject: Request for Interview KTRS Radio, St. Louis (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody,

I have a request for a live radio interview with McGraw Milhaven of KTRS Radio in St. Louis. The day/time -- Wednesday, 7:20 a.m. -- conflicts with your schedule (I know you mentioned taking Wednesday off).

Is there another SME whom you might recommend to talk on:

- Flooding, or lack thereof, in St. Louis
- General overview of flooding in the Missouri River Basin

Thanks.

Very Respectfully,

[REDACTED]
Public Affairs Specialist
U.S. Army Corps of Engineers Omaha District
Office: [REDACTED]
Cell: [REDACTED]
www.nwo.usace.army.mil

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

WFO

From: [REDACTED] NWD02
Sent: Monday, June 20, 2011 1:27 PM
To: Blechinger, Erik T NWO
Cc: Farhat, Jody S NWD02
Subject: FW: [REDACTED] visit to Omaha (UNCLASSIFIED)
Attachments: robert_kelly.vcf

Classification: UNCLASSIFIED
Caveats: NONE

FYI. See email chain below regarding HPC person being sent to Omaha.

[REDACTED] P.E.
Reservoir Regulation Team Lead
Missouri River Basin Water Management,
Northwestern Division, USACE
[REDACTED]
[REDACTED] (fax)

-----Original Message-----

From: [REDACTED] [mailto:[REDACTED]@noaa.gov]
Sent: Monday, June 20, 2011 1:25 PM
To: [REDACTED]; [REDACTED]; [REDACTED]
Cc: [REDACTED]; [REDACTED]; [REDACTED]; [REDACTED] NWD02
Subject: FW: [REDACTED] visit to Omaha

[REDACTED] ..that would be great! I got your voicemail, too, and we can see about setting up a visit to MBRFC as well. What kind of time frame are you looking at as far as when he would be in Omaha and when in KC?

Jim...can you help with setting up an itinerary for Frank at the JIC and WFO, as well as a little info as to what he can expect at the JIC? I assume he would fly in on Monday ([REDACTED] can confirm).

[REDACTED] ...would you all be able to host a visit by HPC forecaster, [REDACTED]

Thanks!
Noreen

-----Original Message-----

From: [REDACTED] [mailto:[REDACTED]@noaa.gov]
Sent: Monday, June 20, 2011 1:09 PM
To: [REDACTED]
Subject: [REDACTED] visit to Omaha

[REDACTED]
We can send [REDACTED] next week to Omaha. We need a point of contact and some idea of what he should expect.

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 12:27 PM
To: Farhat, Jody S NWD02
Subject: Request for Interview KTRS Radio, St. Louis (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody,

I have a request for a live radio interview with McGraw Milhaven of KTRS Radio in St. Louis. The day/time -- Wednesday, 7:20 a.m. -- conflicts with your schedule (I know you mentioned taking Wednesday off).

Is there another SME whom you might recommend to talk on:

- Flooding, or lack thereof, in St. Louis
- General overview of flooding in the Missouri River Basin

Thanks.

Very Respectfully,

~~Kevin Winger~~
Public Affairs Specialist
U.S. Army Corps of Engineers Omaha District
Office: [REDACTED]
Cell: [REDACTED]
www.nwo.usace.army.mil

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 12:23 PM
To: Farhat, Jody S NWD02
Subject: FW: Requesting Interview (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

FYSA.

VR,

[REDACTED]
Public Affairs Specialist
U.S. Army Corps of Engineers Omaha District
Office: [REDACTED]
Cell: [REDACTED]
www.nwo.usace.army.mil

-----Original Message-----

From: Kim Wilson [<mailto:kawilson@ktiv.com>]
Sent: Monday, June 20, 2011 12:22 PM
To: [REDACTED] NWO
Cc: Kristen Johnson; Shawn Kirkpatrick
Subject: RE: Requesting Interview (UNCLASSIFIED)

Thank you. The person interviewing her will be Kristen Johnson. We look forward to her call at 1:45

Kimberly A. Wilson
5pm Producer/Desk Assistant

3135 Floyd Blvd.
Sioux City, IA 51108
712-239-4100 x245
1-800-234-5848 x245
712-239-3025 (FAX)
ktivnews@ktiv.com

-----Original Message-----

From: [REDACTED] NWO [[mailto:\[REDACTED\]@usace.army.mil](mailto:[REDACTED]@usace.army.mil)]
Sent: Monday, June 20, 2011 12:17 PM
To: Kim Wilson
Subject: RE: Requesting Interview (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Kim,

Jody Farhat, our chief of Water Management Division, is available at 1:45 p.m. She will call you at 712-239-4100. I am attaching a bio for your use.

Let me know if I can be of more assistance.

Very Respectfully,

[REDACTED]
Public Affairs Specialist
U.S. Army Corps of Engineers Omaha District
Office: [REDACTED]
Cell: [REDACTED]
www.nwo.usace.army.mil

-----Original Message-----

From: Kim Wilson [mailto:kawilson@ktiv.com]
Sent: Monday, June 20, 2011 11:30 AM
To: [REDACTED] NWO
Subject: RE: Requesting Interview (UNCLASSIFIED)

We are in Yankton and would love an on-camera interview if that would work.
If it doesn't, we would take a phone interview.

Kimberly A. Wilson
5pm Producer/Desk Assistant

3135 Floyd Blvd.
Sioux City, IA 51108
712-239-4100 x245
1-800-234-5848 x245
712-239-3025 (FAX)
ktivnews@ktiv.com

-----Original Message-----

From: [REDACTED] NWO [mailto:[REDACTED]@usace.army.mil]
Sent: Monday, June 20, 2011 11:23 AM
To: [REDACTED]
Subject: RE: Requesting Interview (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Kim,

I'm filling in for Monique today. Are you looking for a phone interview with a subject matter expert or on camera interview in your area?

Very Respectfully,

[REDACTED]
Public Affairs Specialist
U.S. Army Corps of Engineers Omaha District
Office: [REDACTED]
Cell: [REDACTED]
www.nwo.usace.army.mil

-----Original Message-----

From: Farmer, Monique L NWO
Sent: Monday, June 20, 2011 10:22 AM
To: [REDACTED] NWO
Subject: Fw: Requesting Interview

From: Kim Wilson <kawilson@ktiv.com>
To: Farmer, Monique L NWO
Sent: Mon Jun 20 08:11:47 2011
Subject: Requesting Interview

Monique,

We had a couple of questions and were hoping to get an interview with the Corps today.

--- With the Oahe Dam releasing at 160,000 cfs, will that mean an increase at Gavins Point Dam?

--- Yankton, SD has already received 3 inches of rain and is expected to get more tonight, will that play a role in a possible increased release?

--- What is the maximum release that Gavins Point can release?

--- How soon before an increase will the Corps warn the public?

Please let me know if this interview is possible and at what time.

Thank you.

Kimberly A. Wilson

5pm Producer/Desk Assistant

3135 Floyd Blvd.

Sioux City, IA 51108

712-239-4100 x245

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ktivnews@ktiv.com

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: [REDACTED] M NWO
Sent: Monday, June 20, 2011 12:20 PM
To: Farhat, Jody S NWD02
Subject: FW: Requesting Interview (UNCLASSIFIED)
Attachments: Farhat.pdf

Classification: UNCLASSIFIED
Caveats: NONE

Jody,

FYSA. Phone call 1:45 p.m. @ 712-239-4100 with Kim Wilson of KTIV in Sioux City, Iowa. Per our previous conversation, you have the sheet with the questions that Kim will be asking. If you need any assistance, please let me know. Thanks, Jody.

Very Respectfully,

[REDACTED]
Public Affairs Specialist
U.S. Army Corps of Engineers Omaha District
Office: [REDACTED]
Cell: [REDACTED]
www.nwo.usace.army.mil

-----Original Message-----

From: [REDACTED] M NWO
Sent: Monday, June 20, 2011 12:17 PM
To: 'Kim Wilson'
Subject: RE: Requesting Interview (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

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Let me know if I can be of more assistance.

Very Respectfully,

[REDACTED]
Public Affairs Specialist
U.S. Army Corps of Engineers Omaha District
Office: [REDACTED]
Cell: [REDACTED]
www.nwo.usace.army.mil

-----Original Message-----

From: Kim Wilson [<mailto:kawilson@ktiv.com>]
Sent: Monday, June 20, 2011 11:30 AM

To: [REDACTED] NWO
Subject: RE: Requesting Interview (UNCLASSIFIED)

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Sioux City, IA 51108
712-239-4100 x245
1-800-234-5848 x245
712-239-3025 (FAX)
ktivnews@ktiv.com

-----Original Message-----

From: [REDACTED] M NWO [[mailto:\[REDACTED\]@usace.army.mil](mailto:[REDACTED]@usace.army.mil)]
Sent: Monday, June 20, 2011 11:23 AM
To: Kim Wilson
Subject: RE: Requesting Interview (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Kim,

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Very Respectfully,

[REDACTED]
Public Affairs Specialist
U.S. Army Corps of Engineers Omaha District
Office: [REDACTED]
Cell: [REDACTED]
www.nwo.usace.army.mil

-----Original Message-----

From: Farmer, Monique L NWO
Sent: Monday, June 20, 2011 10:22 AM
To: [REDACTED] M NWO
Subject: Fw: Requesting Interview

From: Kim Wilson <kawilson@ktiv.com>
To: Farmer, Monique L NWO
Sent: Mon Jun 20 08:11:47 2011
Subject: Requesting Interview

Monique,

We had a couple of questions and were hoping to get an interview with the Corps today.

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--- How soon before an increase will the Corps warn the public?

Please let me know if this interview is possible and at what time.

Thank you.

Kimberly A. Wilson

5pm Producer/Desk Assistant

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ktivnews@ktiv.com

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE



**US Army Corps
of Engineers®**
Northwestern Division

Jody Farhat

Chief, Water Management Division

Jody Farhat has served as the Chief of the Missouri River Basin Water Management office since May 2009. Her office, which is part of the Corps of Engineers' Northwestern Division, is located in Omaha, Nebraska. She and her staff regulate the six Corps' dams on the main stem of the Missouri River to serve the Congressionally authorized project purposes. Jody has spent the past 22 years of her career working in all aspects of Missouri River Water Management. Prior to coming to the Northwestern Division, she worked in the Hydrologic Engineering Branch of the Corps' Omaha District.

Jody is native of Iowa, and has a bachelor's degree in Civil Engineering from the University of Iowa. She is a Registered Professional Engineer in the State of Nebraska.

NWO

From: [REDACTED] NWD02
Sent: Monday, June 20, 2011 12:18 PM
To: Farhat, Jody S NWD02; Thomas, Kimberly S NWO
Subject: Request for info. (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] (SPN) called. Evidently there is a conference call with Ag this afternoon. He asked for two things.

1. The latest "teacup" presentation - I sent him the link to what I think he means. That ppt presentation was last updated on Saturday.

2. An estimate of damage to agricultural lands, preferably in acres.

He may have gotten my name because I am sitting in for [REDACTED] here.

[REDACTED]
Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: Lester Cruse [Lester.Cruse@ergon.com]
Sent: Monday, June 20, 2011 12:03 PM
To: Bill Beacom; Bill Jackson; Carl Clark; Chad; Dave Dewey; David Smith; Doug Clark; Doug Halbert; [REDACTED] MVS External Stakeholder; Garland; Jason Branstetter; John Drew; Katie Safley; Kevin Holcer; Kip; Larry Reddick; Cruse, Lester External Stakeholder; [REDACTED]h, [REDACTED] LRP; Mike Olson; [REDACTED] MVS External Stakeholder; Pam Lawhon; Paul Dolak; Randy Asbury-CRP; Randy Canfield; Ray Bohlken; Roger Harris; Steve Engemann; [REDACTED] WK; BMCM [REDACTED]; [REDACTED] USCG; [REDACTED]; [REDACTED]; David Martyn; [REDACTED]; LCDR [REDACTED]; Scott Adler; [REDACTED] NWD; [REDACTED] MVS; [REDACTED] NWK; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] NWK; [REDACTED] NWD02; [REDACTED] MVD; [REDACTED] NWD02; [REDACTED] HQ02; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWO; Thomas, Kimberly S NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Missouri River WAP-HW Trigger Table for 06-20-2011
Attachments: MO RIV WAP HW Trigger Table June 20, 2011.xls

Magnolia Marine Transport Company
Captain Lester Cruse III
Port Captain
Office: (800) 696-5921 24-Hour Number
Desk: (601) 802-8602
Cell: (601) 831-1406
Fax: (601) 638-8475

lester.cruse@ergon.com

lcruseiii@gmail.com

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Tough times never last, but tough people do with Gods Help!

MISSOURI RIVER WAP ANNEX HIGH WATER STAGE

TRIGGER TABLE

June 20, 2011

RISING GAGE READING

Reach	Gage Location	No Action	Trigger Stage Reading (ft)*		Extreme High Water
			Normal Operations	High Water	
SIOUX CITY REACH RM 734.8 - 630	Sioux City Omaha	< 28	28 - 29	29 - 30	> 30
		< 21	21 - 26	26 - 29	> 29
OMAHA REACH RM 630 - 500	Omaha Rulo	< 21	21 - 26	26 - 29	> 29
		< 15	15 - 17	17 - 20	> 20
ST JOSEPH REACH RM 500 - 400 Atc. Bridge out at 26'	Rulo St. Joseph Atchison** Kansas City	< 15	15 - 17	17 - 20	> 20
		< 15	15 - 17	17 - 20	> 20
		< 21	21 - 22	22 - 26	> 26
		< 30	30 - 32	32 - 35	> 35
KANSAS CITY REACH RM 400 - 300	Kansas City Waverly	< 30	30 - 32	32 - 35	> 35
		< 20	20 - 22	22 - 25	> 25
BRUNSWICK REACH RM 300 - 200	Waverly Miami Glasgow Boonville	< 20	20 - 22	22 - 25	> 25
		< 18	18 - 21	21 - 25	> 25
		< 22	22 - 25	25 - 27	> 27
		< 20	20 - 21	21 - 25	> 25
JEFFERSON REACH RM 200 - 100	Boonville Jefferson City Hermann	< 20	20 - 21	21 - 25	> 25
		< 22	22 - 23	23 - 26	> 26
HERMANN REACH RM 100 - 0	Hermann Washington St. Charles	< 20	20 - 21	21 - 25	> 25
		< 19	19 - 20	20 - 26	> 26
		< 22	22 - 25	25 - 27	> 27

*** NOTE: For Falling Gage Readings Review the Table Columns from Right to Left**

***NOTE: Bridge Tender for Union Pacific RR Bridge at Atchison, KS may close the swingspan section when Atchison river gage reaches 26 ft with a rising river predicted.

Corps of Engineers Two Week Forecast - Some predicted rainfall has been added. The forecast includes water in the tributaries at the gages routed to the Missouri River.

[illegible]

[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Monday, June 20, 2011 11:09 AM
To: Farhat, Jody S NWD02
Subject: FW: Use of Flood Control Storage at Reclamation Reservoirs (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

FYSA. I wanted them to clarify the ungated glory-hole design for Shadehill and Heart Butte.

[REDACTED], P.E.
Reservoir Regulation Team Lead
Missouri River Basin Water Management,
Northwestern Division, USACE
[REDACTED]
[REDACTED] (fax)

-----Original Message-----

From: [REDACTED] NWD02
Sent: Monday, June 20, 2011 10:42 AM
To: [REDACTED] NWO; [REDACTED] NWO
Subject: RE: Use of Flood Control Storage at Reclamation Reservoirs (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED]

Besides the Keyhole comment below, I'd suggest that you add a little more description to the second sentence for both Heart Butte and Shadehill ... Storage above xxxx.x ft is discharged through the ungated glory-hole type shaft spillway (having an estimated capacity of x,xxx cfs with water surface at maximum flood control pool elevation xxxx.x).

The way it's written now gives the impression that the "ungated spillway" is something that could be gated or obstructed to allow for additional storage ~ ala the difference between Jamestown and Pipestem.

[REDACTED], P.E.
Reservoir Regulation Team Lead
Missouri River Basin Water Management,
Northwestern Division, USACE
[REDACTED]
[REDACTED] (fax)

-----Original Message-----

From: [REDACTED] NWD02
Sent: Saturday, June 18, 2011 2:54 PM
To: Farhat, Jody S NWD02
Subject: FW: Use of Flood Control Storage at Reclamation Reservoirs (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

The only change I would suggest is that they modify their description of Keyhole to indicate that "with no releases being made from Keyhole, currently or forecasted, inflows are so low that the reservoir level is not expected to enter the flood control pool."

- [REDACTED]

Kevin Grode, P.E.
Reservoir Regulation Team Lead
Missouri River Basin Water Management,
Northwestern Division, USACE

[REDACTED]

[REDACTED] (fax)

-----Original Message-----

From: [REDACTED] NWO

Sent: Friday, June 17, 2011 6:53 PM

To: Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED] NWD02

Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] e,
[REDACTED]

Subject: Use of Flood Control Storage at Reclamation Reservoirs

Attached is a draft response to request from Missouri River Water Management Division for use of flood control storage in Reclamation Reservoirs. This memorandum will be finalized on Monday, June 20. Please provide comments or suggestions by email or we can meet with you if necessary.

Thanks,

[REDACTED]

Hydraulic Engineer
Water Control & Water Quality Section
[REDACTED] (office)
[REDACTED] (cell)

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: [REDACTED] NWD02
Sent: Monday, June 20, 2011 10:56 AM
To: DLL-CENWD-PDR; [REDACTED] Jr NWO
Subject: Monday Rain Report

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC
DATE=Jun 20, 2011 - 14:02:18
0

>>>>>>> PAGESIZE 60

>>>>>>> DUMPPP24 * *

0**NOTE** DATA FOR THE PERIOD 06/20/2011-12Z THROUGH 06/20/2011-12Z WILL BE PROCESSED.
QUANTITY DESC (0.01)
OBONLY
END

0PP24 DATA FOR 06/20/11-12Z THRU 06/20/11-12Z

0 - = MISSING VALUE OR SUM E = ESTIMATED VALUE P = PARTIAL SUM

STATION	PERIOD
ID	SUM
HAYN1	4.84
SNY	3.90
SDYN1	3.88
SINN1	3.76
BLMI4	3.25
KNGN1	3.19
DEOI4	3.03
BCNI4	2.89
BLAN1	2.89
CHEY037	2.79
LOGI4	2.65
LGNI4	2.65
HAYE002	2.58
BLIN1	2.46
ORUN1	2.46
OGLN1	2.43
TQE	2.43
BLRN1	2.33
WBNI4	2.30
DSM	2.23
MONI4	2.23
MVLI4	2.21
RADI4	2.21
CHEY035	2.21
PALN1	2.18
WLHN1	2.17
CNTI4	2.07
LYON1	2.06
PAIN1	2.05
CLDI4	2.04
HRLI4	2.04
COB034	2.02
MTAI4	2.01
LUPN1	1.97

CHEY002	GURLEY 6SE	NE	1.95E	1.96
WAUN1	WAUNETA	NE	1.94E	1.95
SIDN1	SIDNEY 6NNW	NE	1.92E	1.92
MOLI4	MOULTON, CHARITON R	IA	1.89E	1.89
OAKN1	OAKLAND	NE	1.87E	1.88
ICR	WINNER AIRPORT	SD	1.82	1.83
SFD	WINNER AIRPORT	SD	1.82E	1.83
NDLC2	NEDERLAND 2NNE	CO	1.81E	1.81
WINS2	WINNER	SD	1.81E	1.81
ICLI4	CLARINDA, NODAWAY R	IA	1.80	1.80
TEKN1	TEKAMAH	NE	1.80	1.80
LWRS2	WHITE RIVER 2N	SD	1.80	1.80
MOKN1	MCCOOK 17NNW	NE	1.76	1.76
WRVS2	WHITE RIVER	SD	1.76E	1.76

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC
 DATE=Jun 20, 2011 - 14:02:19

ID	DESCRIPTION	STATE	06/20	PERIOD SUM
DOWM7	DOWNING	MO	1.75	1.75
ERLI4	EARLING	IA	1.75E	1.75
WTRI4	WINTERSET 2NNW	IA	1.74	1.75
AUDI4	AUDUBON	IA	1.73	1.74
STPN1	ST PAUL 4N	NE	1.73	1.74
BLGN1	BELGRADE	NE	1.72	1.73
CHRI4	CHARITON 1E	IA	1.72	1.73
RMSI4	REMSEN #2	IA	1.72	1.73
SPUN1	ST PAUL, NORTH LOUP	NE	1.72E	1.73
BCTN1	BANCROFT, LOGAN CR	NE	1.71E	1.72
GELN1	GENOA 2S, LOUP R	NE	1.71	1.72
REMI4	REMSEN	IA	1.71E	1.72
LSXI4	LITTLE SIOUX 2NW	IA	1.70	1.71
UNGN1	UEHLING	NE	1.70	1.71
ELWN1	ELWOOD 8S	NE	1.69	1.70
GEON1	GENOA, BEAVER CR	NE	1.68E	1.68
CHTI4	CHARITON 5SSE	IA	1.67E	1.67
UHLN1	UEHLING	NE	1.66E	1.66
GDNC2	RALSTON RESERVOIR	CO	1.65	1.65
UEHN1	UEHLING, LOGAN CR	NE	1.65E	1.65
LSHI4	LOESS HILLS RAWS	IA	1.64E	1.64
PSGI4	PISGAH, SOLDIER R	IA	1.64E	1.64
ASHN1	ASHTON	NE	1.63E	1.63
FLTN1	FULLERTON	NE	1.62	1.63
GNAN1	GENOA 2W	NE	1.62E	1.63
RLSC2	RALSTON RESERVOIR	CO	1.62E	1.63
SDHI4	SHENANDOAH	IA	1.62	1.63
GSRC2	BOULDER 7SW	CO	1.61E	1.62
ANSN1	ANSELMO 2SE	NE	1.60	1.61
RETS2	REE HEIGHTS 15S	SD	1.60	1.61
CMBI4	COLUMBIA	IA	1.58E	1.59
SHLN1	SHELBY 3NE	NE	1.58	1.59
MAXN1	MAX 13N	NE	1.55	1.55
PRMI4	PROMISE CITY 6NW	IA	1.55	1.55
WLLN1	WALLACE 2W	NE	1.55E	1.55
EVGC2	EVERGREEN	CO	1.54	1.54
IRWI4	IRWIN 3ESE	IA	1.54E	1.54

ENDN1	ENDERS DAM	NE	1.52E	1.52
FCLN1	FORT CALHOUN 4W	NE	1.52	1.52
SHEM001	LITCHFIELD 4N	NE	1.51E	1.51
SPLN1	ST PAUL #2 MID LOUP	NE	1.51E	1.51
GTHI4	GUTHRIE CENTER	IA	1.50	1.50
COYI4	CORYDON 2NE	IA	1.44E	1.45
DERI4	DERBY	IA	1.43E	1.43
HOON1	HOOPER	NE	1.43E	1.43
KITC2	KITTREDGE GDSS	CO	1.42E	1.42
PANI4	PANORA	IA	1.42E	1.42
VDIM7	VANDIKE FARMS 4NNE	MO	1.42	1.42
DMX	DES MOINES WFO	IA	1.41E	1.41
CYS	CHEYENNE AIRPORT	WY	1.40	1.40
RLVC2	ROLLINSVILLE 1NW	CO	1.40E	1.40
CYSW4	CHEYENNE WFO	WY	1.39E	1.39
BTAC2	BOULDER 3W	CO	1.38	1.38

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STATION				PERIOD
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BLFC2	BOULDER 7SW	CO	1.38E	1.38
FEWW4	CHEYENNE WY WY	WY	1.38E	1.38
COB057	NEDERLAND 6E	CO	1.38E	1.38
OROC2	ORODELL, BOULDER CR	CO	1.38E	1.38
FLMW4	FORT LARAMIE CANAL	WY	1.36	1.37
HRMN1	HERMAN	NE	1.36E	1.37
PTRN1	POTTER	NE	1.36E	1.37
BGSN1	BIG SPRINGS	NE	1.35	1.36
SRBN1	SCRIBNER, PEBBLE CR	NE	1.34E	1.35
OSEI4	OSCEOLA	IA	1.33E	1.34
SCRN1	SCRIBNER	NE	1.32E	1.33
WUDS2	WOOD	SD	1.32E	1.33
ALBN1	ALBION	NE	1.31E	1.31
BAYI4	BAYARD 6SE	IA	1.31E	1.31
ALBI4	ALBIA 3NNE	IA	1.30	1.30
CSPW4	CASPER MOUNTAIN	WY	1.30	1.30
MIDS2	MIDLAND, BAD R	SD	1.30	1.30
ALRI4	ALLERTON	IA	1.29E	1.29
RSO1	ROSCOE, SO PLATTE R	NE	1.28	1.28
SIDI4	SIDNEY	IA	1.28	1.28
SMMC2	ARVADA	CO	1.27E	1.27
KIPC2	EVERGREEN 2SSE	CO	1.27E	1.27
GRYI4	GRAY	IA	1.27E	1.27
LINC033	SUTHERLAND 1NW	NE	1.27E	1.27
CEKC2	CORRAL CREEK	CO	1.26	1.26
GRRC2	GROSS RESERVOIR	CO	1.26	1.26
IML	IMPERIAL	NE	1.26	1.26
ADAI4	ADAIR 2NNW	IA	1.25E	1.25
GSSC2	GROSS RESERVOIR	CO	1.25E	1.25
LINC036	SUTHERLAND 1N	NE	1.24E	1.25
DVDN1	DAVID CITY	NE	1.23	1.24
ENS1	ENDERS, FRENCHMAN CR	NE	1.23E	1.24
BEDI4	BEDFORD	IA	1.22	1.23
COII4	COIN	IA	1.21E	1.22
RAVN1	RAVENNA	NE	1.21E	1.22

RVNN1	RAVENNA, SO LOUP R	NE	1.21	1.22
WSBM8	WESTBY	MT	1.21	1.22
LVAM7	LIVONIA	MO	1.20E	1.21
LVZM7	LIVONIA, CHARITON R	MO	1.20	1.21
MUDS2	MURDO (AMRAD)	SD	1.20E	1.21
SHEI4	SHELBY	IA	1.20E	1.21
PIR	PIERRE REGIONAL AP	SD	1.19	1.20
CUST015	ANSELMO 9NW	NE	1.18E	1.18
CTLN1	CENTRAL CITY	NE	1.18	1.18
EXII4	EXIRA	IA	1.18E	1.18
TRNI4	TURIN 4SW, M-H DITCH	IA	1.18E	1.18
ABON1	ALBION 7W	NE	1.17E	1.17
PIPS2	BELVIDERE 6SE	SD	1.17	1.17
STKN1	STOCKVILLE	NE	1.16E	1.16
CROC2	CROOK 7NNE	CO	1.15E	1.15
DNBN1	DANNEBROG #2	NE	1.15E	1.15
KMBN1	KIMBALL 2NE	NE	1.15	1.15
COJF140	RALSTON BUTTES 1NNW	CO	1.15E	1.15

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BCRW4	BATES CREEK	WY	1.14E	1.14
BSSN1	BUSHNELL 15S	NE	1.14	1.14
TURI4	TURIN, LTL SIOUX R	IA	1.14E	1.14
DBGN1	DANNEBROG, TURKEY CR	NE	1.13	1.13
OKDN1	OAKDALE	NE	1.13	1.13
CUST014	ANSELMO 12WSW	NE	1.12E	1.13
DABN1	DANNEBROG 4NW	NE	1.12E	1.13
COCC1	EVERGREEN 7WSW	CO	1.12E	1.13
HMNN1	HERMAN 4WSW	NE	1.12E	1.13
PAXN1	PAXTON	NE	1.12E	1.13
PXTN1	PAXTON KORTY POWER	NE	1.12E	1.13
ENSI4	RIVERTON, EAST NISH	IA	1.12	1.13
CHEW4	CHEYENNE 7W	WY	1.11E	1.12
DOGS2	HE DOG LAKE	SD	1.11E	1.12
CSBN8	CROSBY 30W RAW	ND	1.10E	1.11
FTPS2	FT PIERRE 3S, BAD R	SD	1.10E	1.11
HITI4	HONEY CREEK 1SE	IA	1.10	1.11
ITRC2	INTER CANYON	CO	1.10	1.11
OACS2	OACOMA 9SW, WHITE R	SD	1.10	1.11
PHMS2	PIERRE	SD	1.10E	1.11
MOON1	MOOREFIELD	NE	1.09E	1.10
LLHC2	BOULDER 6NW	CO	1.08E	1.09
FTAN8	FORTUNA 1W	ND	1.08E	1.09
MURS2	MURDO	SD	1.08E	1.09
PINS2	INTERIOR 15SW RAW	SD	1.07E	1.08
NOLC2	LAKEWOOD	CO	1.07E	1.08
LKWC2	LAKEWOOD 4NW	CO	1.07	1.08
PRMS2	PARMELEE 6W	SD	1.07E	1.08
MCCN1	RED WILLOW DAM	NE	1.07E	1.08
DVNC2	DENVER WATER DEPT	CO	1.06	1.06
NRLN1	NORTH LOUP	NE	1.06E	1.06
CDRS2	CEDAR BUTTE 1NE	SD	1.05E	1.05
YEN	ESTEVAN	SK	1.05	1.05

ARHN1	ARTHUR	NE	1.04E	1.04
PIES2	OAHE DAM	SD	1.04E	1.04
PARN1	PARKS 17N	NE	1.04E	1.04
CCCC2	COAL CREEK CANYON	CO	1.03E	1.03
GREN1	GREELEY	NE	1.03	1.03
LDGN1	LODGEPOLE	NE	1.03E	1.03
WPTN1	WEST POINT	NE	1.03	1.03
WPNN1	WEST POINT, ELKHORN R	NE	1.03E	1.03
AVOI4	AVOCA	IA	1.02E	1.02
EUSN1	EUSTIS 2NW	NE	1.02	1.02
SRPN1	SURPRISE, BIG BLUE R	NE	1.02E	1.02
WGEC2	WHEAT RIDGE	CO	1.02E	1.02
COAR186	AURORA 3WSW	CO	1.01	1.01
DTNN1	DALTON	NE	1.01E	1.01
ONIS2	ONIDA 7NE	SD	1.01	1.01
CKKC2	CROOK	CO	1.00	1.00
FMMC2	FLEMING 3SW	CO	1.00E	1.00
KENI4	KENNEBEC, LTL SIOUX	IA	1.00	1.00
LTLC2	MARSTON FILTER PLANT	CO	1.00	1.00
NIWC2	NIWOT	CO	1.00	1.00

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COJF121	WHEATRIDGE	CO	1.00E	1.00
FEDC2	DENVER 7W	CO	0.99E	1.00
CABN1	HARRY STRUNK RES	NE	0.99E	1.00
LWD	LAMONI	IA	0.99	1.00
NMRC2	NEW RAYMER 21N	CO	0.99E	1.00
CRKC2	CROOK	CO	0.98E	0.99
NRBI4	NORTHBORO	IA	0.98E	0.99
OLYC2	OLYMPUS DAM	CO	0.98E	0.99
CKSC2	CROOK, SO PLATTE R	CO	0.97	0.98
FMTN1	FREMONT	NE	0.97	0.98
BBDS2	BIG BEND DAM	SD	0.96E	0.96
BLBN1	BLAIR 4SW	NE	0.96E	0.96
DEN	DENVER INTL AIRPORT	CO	0.96	0.96
CUST021	MERNA 11W	NE	0.96E	0.96
WLTN1	WALTHILL 1E	NE	0.96	0.96
WHLN1	WALTHILL, S OMAHA CR	NE	0.96E	0.96
FLEC2	FLEMING AMRAD	CO	0.95E	0.95
KIGN1	KILGORE 1NE	NE	0.95	0.95
LEXN1	LEXINGTON	NE	0.95	0.95
RHSS2	REE HEIGHTS 5S	SD	0.95	0.95
BURT002	CRAIG 6S	NE	0.94E	0.94
ELGN1	ELGIN	NE	0.94E	0.94
IOW	IOWA CITY AIRPORT	IA	0.94	0.94
RHGS2	REE HEIGHTS 8S	SD	0.94E	0.94
WNSI4	RIVERTON, WEST NISH	IA	0.94	0.94
FRON005	BARTLEY 9NNW	NE	0.93E	0.94
HRSN1	CHADRON 6S RAWs	NE	0.93	0.94
SHRW4	SHIRLEY BASIN	WY	0.93	0.94
APA	DENVER CENTENNIAL AP	CO	0.92	0.93
MERS2	MILLER 15S	SD	0.92E	0.93
GREE007	SPALDING	NE	0.92E	0.93

CMRW4	CASPER MOUNTAIN	WY	0.91E	0.92
FPRS2	FORT PIERRE 17WSW	SD	0.91E	0.92
PERK018	GRANT 8WSW	NE	0.91E	0.92
GRNI4	GREENFIELD	IA	0.91E	0.92
IMPNI	IMPERIAL	NE	0.91	0.92
KBLN1	KIMBALL 14SSW	NE	0.91E	0.92
LENI4	LEON 6ESE	IA	0.91	0.92
WATN8	WATFORD CITY 14S	ND	0.91	0.92
BDFI4	BEDFORD, E FK 102 R	IA	0.90	0.90
CMBN1	CAMBRIDGE	NE	0.90	0.90
CAMN1	CAMBRIDGE, REPUB R	NE	0.90E	0.90
PIRS2	PIERRE	SD	0.90E	0.90
PTCN1	PLATTE CENTER	NE	0.90E	0.90
RHIS2	REE HEIGHTS 6SW	SD	0.90E	0.90
SBFN1	SCOTTSBLUFF 3SW	NE	0.90	0.90
VILI4	VILLISCA	IA	0.90E	0.90
BRNN1	BERTRAND	NE	0.89E	0.89
EGDC2	CHERRY CREEK DAM	CO	0.89	0.89
IPIN1	IMPERIAL 13N	NE	0.88E	0.88
NEDC2	NEDERLAND 5NNW	CO	0.88E	0.88
NRTC2	NORTHGLENN	CO	0.88	0.88
DNCN1	DUNCAN 2S, PLATTE R	NE	0.87E	0.88

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GERN1	GERING 1NW	NE	0.87E 0.88
PLCN1	PLATTE CENTER	NE	0.87E 0.88
LDPN1	LODGEPOLE #2	NE	0.86E 0.87
MDDN1	MADRID	NE	0.86 0.87
COJF32	CONIFER 3E	CO	0.85E 0.86
DVRC2	DENVER 2SE	CO	0.85E 0.86
HLDN1	HOLDREGE	NE	0.85 0.86
CUST022	BERWYN 4NNE	NE	0.84E 0.84
CWYN1	CALLAWAY 8WSW	NE	0.84 0.84
FTCN1	FORT CALHOUN	NE	0.84E 0.84
NCKN1	NICKERSON 3NE	NE	0.84E 0.84
SDGC2	SEDGWICK 5S	CO	0.84E 0.84
COB049	BOULDER 3SSE	CO	0.83E 0.83
DBLC2	DOUBLEHEADER	CO	0.83E 0.83
CUST020	GOTHENBURG 24N	NE	0.83E 0.83
SMIN1	ST MICHAEL, S LOUP R	NE	0.83E 0.83
CLOI4	CLIO 4NW	IA	0.82E 0.82
GARD009	LEWELLEN 2E	NE	0.82E 0.82
OVTN1	OVERTON 3W, PLATTE R	NE	0.82E 0.82
RLLC2	ROLLINSVILLE GDDS	CO	0.82E 0.82
SOLI4	SOLDIER	IA	0.82E 0.82
AHRW4	ARCHER	WY	0.81E 0.81
ARNN1	ARNOLD	NE	0.81E 0.81
CRYC2	CHERRY CREEK DAM	CO	0.81E 0.81
CTSN1	CURTIS 3NNE	NE	0.81E 0.81
ETSC2	ESTES PARK 1SSE	CO	0.81 0.81
COLR220	ESTES PARK 1SSE	CO	0.81E 0.81
BKNN1	BROKEN BOW 2W	NE	0.80E 0.81
COOI4	COON RAPIDS	IA	0.80 0.81

CSTI4	CRESCENT	IA	0.80E	0.81
EAGC2	EAGLECREST	CO	0.80E	0.81
FTCC2	FORT COLLINS 9NW	CO	0.80	0.81
GGBS2	GETTYSBURG 10SW	SD	0.80E	0.81
PTRI4	PETERSON, LTL SIOUX R	IA	0.80	0.81
RNHW4	RENO HILL	WY	0.80	0.81
TICW4	TIMBER CREEK	WY	0.80	0.81
WITS2	WHITE LAKE	SD	0.80	0.81
WTES2	WHITE LAKE (SDSU)	SD	0.80E	0.81
YDRW4	YODER 5W	WY	0.80E	0.81
BOUC2	BOULDER	CO	0.79E	0.80
BRKN1	BROKEN BOW #2	NE	0.79E	0.80
BBW	BROKEN BOW 2W	NE	0.79	0.80
KDAS2	KADOKA	SD	0.79E	0.80
NLIN1	NELIGH, ELKHORN R	NE	0.79E	0.80
STES2	STEPHAN 10SE	SD	0.79E	0.80
CHKI4	CHEROKEE, LTL SIOUX	IA	0.78E	0.78
POLC2	DECKERS 5E	CO	0.78	0.78
ELON1	ELLSWORTH	NE	0.78	0.78
PUB	PUEBLO	CO	0.78	0.78
SPDN1	SPALDING 5S, CEDAR R	NE	0.78E	0.78
CKPI4	CHEROKEE	IA	0.77E	0.77
CODN88	DENVER 5S	CO	0.77E	0.77
ILLS2	MILLER 15S	SD	0.77E	0.77

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PNDN1	PENDER	NE	0.77E	0.77
KDKC2	ELDORA 3W AMRAD	CO	0.76E	0.76
EST	ESTHERVILLE	IA	0.76	0.76
GONC2	GOLDEN 6NW	CO	0.76E	0.76
NRMC2	NEW RAYMER 21N	CO	0.76E	0.76
COAD40	NORTHGLENN 1WSW	CO	0.76E	0.76
IEN	PINE RIDGE	SD	0.76	0.76
SPLW4	SPLIT ROCK CREEK	WY	0.76	0.76
BABC2	WARD 3NNW, BEAVER CR	CO	0.76E	0.76
CNGS2	CANNING 1W	SD	0.75E	0.75
COLR240	ESTES PARK 2NE	CO	0.75E	0.75
GREN8	GRENORA	ND	0.75E	0.75
LPRW4	LAPRELE CREEK	WY	0.75E	0.75
NLHN1	NELIGH	NE	0.75E	0.75
PNES2	PINE RIDGE 2SE	SD	0.75E	0.75
CPMN1	CHAPMAN	NE	0.74E	0.75
DCTN1	DECATUR, MISSOURI R	NE	0.74E	0.75
GLCC2	GLEN COMFORT	CO	0.74E	0.75
GCMC2	GLEN COMFORT	CO	0.74E	0.75
LEMI4	LE MARS	IA	0.74E	0.75
PEDN1	PENDER, LOGAN CR	NE	0.74E	0.75
WCAS2	PRINGLE 5SE	SD	0.74	0.75
WNDS2	WIND CAVE NATL PARK	SD	0.74E	0.75
CSIC2	COLORADO SIERRA	CO	0.73E	0.74
DNR	DENVER STAPLETON AP	CO	0.73E	0.74
OKRS2	OKCREEK 4W	SD	0.73E	0.74
UNVM7	UNIONVILLE	MO	0.73	0.74

BWRN1	BROADWATER 3WNW	NE	0.72	0.73
HZZS2	HAYES 7SW	SD	0.72E	0.73
HUDW4	HUDSON	WY	0.72	0.73
KDKS2	KADOKA 6S, WHITE R	SD	0.72	0.73
NGRN1	NEWMAN GROVE	NE	0.72E	0.73
ODAS2	ONIDA 4NW	SD	0.72E	0.73
SCBN1	SCOTTSBLUFF 1E	NE	0.72E	0.73
DERN1	SCOTTSBLUFF 2WNW	NE	0.72E	0.73
THOC2	THORNTON	CO	0.72E	0.73
ARPN1	ARAPAHOE, MUDDY CR	NE	0.71E	0.71
COLR227	ESTES PARK 1NE	CO	0.71E	0.71
FORN1	KIMBALL 15NE RAWS	NE	0.71E	0.71
3OI	LAMONI	IA	0.71	0.71
LSTW4	LOST CREEK	WY	0.71E	0.71
PHIW4	PHILLIPS	WY	0.71E	0.71
PBTW4	PINE BLUFFS #2	WY	0.71E	0.71
COAD22	THORNTON 2SSE	CO	0.71	0.71
ULYN1	ULYSSES	NE	0.71E	0.71
BXCW4	BOXELDER, BOXELDER C	WY	0.70E	0.70
WYNT3	CASPER 4WSW	WY	0.70E	0.70
CODN25	DENVER 2ESE	CO	0.70E	0.70
DGW	DOUGLAS	WY	0.70	0.70
GVSU4	GRAVE SPRINGS	WY	0.70	0.70
IONS2	IONA 2NE	SD	0.70E	0.70
NKRN1	NICKERSON, MAPLE CR	NE	0.70E	0.70
NOIM8	NOISY BASIN	MT	0.70	0.70

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	OKES2	OKREEK 4SSW	SD	0.70E	0.70
	BCDC2	BEAR CREEK DAM	CO	0.69E	0.69
	CODN1	CODY	NE	0.69E	0.69
	DGSU4	DOUGLAS	WY	0.69E	0.69
	DPWW4	DOUGLAS 1SSW	WY	0.69E	0.69
	CUST004	GOTHENBURG 15NNW	NE	0.69E	0.69
	NEOI4	NEOLA	IA	0.69E	0.69
	BFF	SCOTTSBLUFF	NE	0.69	0.69
	SWEU4	ALCOVA, SWEETWATER R	WY	0.68	0.69
	BEGN1	BENNINGTON 3E	NE	0.68E	0.69
	CPR	CASPER INTL AIRPORT	WY	0.68	0.69
	IRLN1	IRVINGTON 4NW	NE	0.68E	0.69
	LNNI4	LINN GROVE	IA	0.68E	0.69
	OCHI4	OCHEYEDAN	IA	0.68	0.69
	ECRN1	PINE BLUFFS 8SE RAWS	NE	0.68E	0.69
	SLBN1	ST LIBORY	NE	0.68E	0.69
	ANTI4	ANTHON 3E	IA	0.67E	0.68
	ATLN1	ATLANTA 2WNW	NE	0.67E	0.68
	CACM8	BAKER 12NE	MT	0.67	0.68
	COLN8	COLUMBUS	ND	0.67E	0.68
	ESTW4	ESTERBROOK RAWS	WY	0.67E	0.68
	COLR221	ESTES PARK 1E	CO	0.67E	0.68
	KEBN1	KENNARD 2SE	NE	0.67E	0.68
	RLIS2	RELIANCE (AMRAD)	SD	0.67E	0.68
	TYRN1	TRYON 15NW	NE	0.67E	0.68

BEBN1	BENNINGTON 2NW	NE	0.66E	0.67
BERN1	BERTRAND	NE	0.66E	0.67
BKFS2	CUSTER 10NW	SD	0.66E	0.67
4DG	DOUGLAS	WY	0.66E	0.67
COJF257	GOLDEN 4NNW	CO	0.66E	0.67
GECC2	GRANT 2NW	CO	0.66E	0.67
ORIW4	ORIN 2E, N PLATTE R	WY	0.66	0.67
OTM	OTTUMWA	IA	0.66	0.67
PLKN1	POLK	NE	0.66E	0.67
SCFN1	SCOTTSBLUFF 2NNE	NE	0.66E	0.67
OXDC2	AURORA 7SSE AMRAD	CO	0.65E	0.65
ELMN1	ELM CREEK 1SSW	NE	0.65E	0.65
GRTC2	GRANT 1W	CO	0.65	0.65
OSAS2	HERMOSA, BATTLE CR	SD	0.65	0.65
IMOIA	IMOGENE 3N	IA	0.65E	0.65
MICN1	MITCHELL, N PLATTE R	NE	0.65E	0.65
OCNN1	OCONTO	NE	0.65E	0.65
PRSW4	POWDER RIVER SCHOOL	WY	0.65E	0.65
SIOIA	SIOUX CITY, PERRY CR	IA	0.65	0.65
COAR177	AURORA 4SSE	CO	0.64E	0.64
CCKS2	FORT THOMPSON 3E	SD	0.64E	0.64
HERN1	HERSHEY 5SSE	NE	0.64E	0.64
TYLN1	TAYLOR	NE	0.64E	0.64
TAYN1	TAYLOR	NE	0.64E	0.64
TAD	TRINIDAD	CO	0.64E	0.64
WYLM22	CHEYENNE 5NE	WY	0.63	0.63
GRAW4	CHEYENNE 7NE	WY	0.63E	0.63
EDSN1	EDISON	NE	0.63E	0.63

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MASN1	MASON CITY	NE	0.63E	0.63
SURN1	SURPRISE	NE	0.63E	0.63
DDEW4	TORRINGTON 29N	WY	0.63	0.63
WISN1	WISNER	NE	0.63E	0.63
CDNN1	CHADRON	NE	0.62E	0.63
DUGW4	DOUGLAS 17NE	WY	0.62E	0.63
COB0141	ESTES PARK 11SE	CO	0.62	0.63
DCMC2	GRANT 5NW	CO	0.62E	0.63
HMAN1	HERMAN	NE	0.62E	0.63
HSTIA	HOLSTEIN	IA	0.62	0.63
ONAS2	ONIDA 25W	SD	0.62E	0.63
BRLW4	SUNDANCE 12N	WY	0.62	0.63
DMNC2	DENVER MUSEUM	CO	0.61E	0.62
RSNW4	FALES ROCK RAWS	WY	0.61E	0.62
GRNC2	GRANT, SOUTH PLATTE	CO	0.61E	0.62
HOKIA	HORNICK, W FK DITCH	IA	0.61	0.62
KFFC2	KAUFFMAN 4SSE	CO	0.61E	0.62
CRSW4	SPENCER, CHEYENNE R	WY	0.61	0.62
COJF61	CHATFIELD DAM 2NW	CO	0.60E	0.61
EKPW4	ELKHART PARK	WY	0.60	0.61
COJF16	GOLDEN 4WNW	CO	0.60E	0.61
GRDN1	GORDON 3W	NE	0.60E	0.61
HOHS2	HOT SPRINGS (AMRAD)	SD	0.60E	0.61

HOTS2	HOT SPRINGS, FALL R	SD	0.60	0.61
LVRM8	LAKEVIEW RIDGE	MT	0.60	0.61
PRVW4	POWDER RIVER #2	WY	0.60E	0.61
BNTS2	BLUNT	SD	0.59E	0.59
CSWW4	CASPER 1SW	WY	0.59E	0.59
CSAI4	CASTANA EXP FARM	IA	0.59	0.59
CBKS2	COLD BROOK DAM	SD	0.59E	0.59
CDHS2	COTTONWOOD DAM	SD	0.59E	0.59
GLVI4	GALVA	IA	0.59E	0.59
LVMC2	GEORGETOWN 1S	CO	0.59	0.59
CLEC2	GEORGETOWN 2S	CO	0.59E	0.59
GTTS2	GETTYSBURG	SD	0.59E	0.59
GLNW4	GLENROCK, N PLATTE R	WY	0.59E	0.59
GRGS2	GREGORY	SD	0.59E	0.59
LINC004	HERSHEY 6NW	NE	0.59E	0.59
HOSS2	HOT SPRINGS	SD	0.59E	0.59
LAWI4	LAWTON	IA	0.59E	0.59
MPTI4	MAPLETON #2	IA	0.59E	0.59
MAPI4	MAPLETON, MAPLE R	IA	0.59E	0.59
OKAS2	OKATON	SD	0.59E	0.59
P05	PHILIP 3E	SD	0.59E	0.59
PHP	PHILLIP	SD	0.59	0.59
RAYM8	RAYMOND BORDER STA	MT	0.59E	0.59
WHTI4	WASHTA	IA	0.59E	0.59
DIK	DICKINSON AIRPORT	ND	0.58	0.58
HGIC2	HYGIENE 1N	CO	0.58E	0.58
COB099	HYGIENE 1N	CO	0.58	0.58
IDAC2	IDALIA	CO	0.58	0.58
LNXI4	LENOX	IA	0.58E	0.58
MLI	MOLINE	IL	0.58	0.58

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OSCNI	OSCEOLA	NE	0.58	0.58
RIVN1	RIVERDALE, WOOD R	NE	0.58E	0.58
SXRI4	SIOUX RAPIDS 4E	IA	0.58E	0.58
STPS2	STEPHAN 2NW	SD	0.58E	0.58
TOR	TORRINGTON	WY	0.58	0.58
WLFN1	WELLFLEET	NE	0.58	0.58
MFBW4	BARNUM, POWDER R	WY	0.57	0.57
CBYN8	CROSBY	ND	0.57E	0.57
GVRC2	GROVER	CO	0.57E	0.57
EAR	KEARNEY	NE	0.57E	0.57
KRNN1	KEARNEY 4NE	NE	0.57	0.57
RJTW4	LUSK 25NE	WY	0.57	0.57
MSSS2	MISSION	SD	0.57E	0.57
ODSN1	ODESSA	NE	0.57E	0.57
AGAN1	AGATE 3E	NE	0.56E	0.56
AGTN1	AGATE 3ENE RAWS	NE	0.56E	0.56
COAR99	AURORA 4S	CO	0.56	0.56
RATW4	CODY 12WNW	WY	0.56	0.56
COLR230	ESTES PARK 2SSW	CO	0.56E	0.56
GOTN1	GOTHENBURG	NE	0.56E	0.56
PCHI4	HINTON 4W, PERRY CR	IA	0.56E	0.56

KEAN1	KEARNEY 3S, PLATTE R	NE	0.56E	0.56
LKVM8	LAKEVIEW	MT	0.56E	0.56
MITN1	MITCHELL 5E	NE	0.56E	0.56
UFMN1	MITCHELL 6ENE	NE	0.56	0.56
NPAN1	NORTH PLATTE 10S	NE	0.56E	0.56
PTHW4	PATHFINDER DAM	WY	0.56E	0.56
PBFW4	PINE BLUFFS 5W	WY	0.56E	0.56
THNC2	THORNTON 5NNE	CO	0.56E	0.56
TORW4	TORRINGTON 2NW	WY	0.56E	0.56
BOJC2	BOULDER	CO	0.55E	0.56
BOXN1	BOX BUTTE DAM	NE	0.55E	0.56
BCOC2	BROOMFIELD	CO	0.55E	0.56
COCC13	GEORGETOWN 1SSW	CO	0.55E	0.56
LGVS2	LONGVALLEY	SD	0.55E	0.56
MDDW4	MIDDLE POWDER	WY	0.55E	0.56
WTDN8	WATFORD CITY	ND	0.55	0.56
WFCN8	WATFORD CITY	ND	0.55E	0.56
WCYN8	WATFORD CITY 1S	ND	0.55E	0.56
AGAS2	AGAR 3N	SD	0.54	0.55
ALVW4	ALCOVA 17NW	WY	0.54E	0.55
ASBN1	ASHBY 20SSW	NE	0.54E	0.55
BLKI4	BLOCKTON 1W	IA	0.54	0.55
BRJM7	BURLINGTON JUNCTION	MO	0.54E	0.55
CWWW4	CASPER WATER PLANT	WY	0.54E	0.55
CPRW4	CASPER, NO PLATTE R	WY	0.54	0.55
COZN1	COZAD 2S, PLATTE R	NE	0.54	0.55
LCKW4	LANCE CREEK 1W	WY	0.54E	0.55
MDWN1	MEADOW GROVE	NE	0.54E	0.55
PBNW4	PINE BLUFFS 10NW	WY	0.54E	0.55
PTYM8	PLENTYWOOD	MT	0.54E	0.55
PROS2	PRESHO 7NW	SD	0.54E	0.55
SDNW4	SUNDANCE	WY	0.54E	0.55

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UVIC2	AURORA 5N	CO	0.53E	0.53
BDWN1	BROADWATER 4SSW	NE	0.53E	0.53
EVYI4	EVERLY 3WNW	IA	0.53	0.53
GRWN1	GRAND ISLAND	NE	0.53E	0.53
GRI	GRAND ISLAND AIRPORT	NE	0.53	0.53
GRBN8	GRASSY BUTTE 2ENE	ND	0.53E	0.53
HIHS2	HIGHMORE 7S	SD	0.53E	0.53
WSCS2	ONIDA 15NW	SD	0.53E	0.53
RANI4	RANDOLPH	IA	0.53	0.53
RDPI4	RANDOLPH 1W, W NISH	IA	0.53E	0.53
RBDW4	REDBIRD	WY	0.53E	0.53
TEDC2	TEDS PLACE	CO	0.53E	0.53
BGHC2	BRIGHTON 5WNW	CO	0.52E	0.52
DNDN8	DICKINSON DAM	ND	0.52E	0.52
EDIN1	EDISON 2E, TURKEY CR	NE	0.52E	0.52
EMMI4	EMMETSBURG	IA	0.52E	0.52
COCC10	EVERGREEN 6NW	CO	0.52E	0.52
HOPM7	HOPKINS	MO	0.52	0.52
HORI4	HORNICK 5S	IA	0.52E	0.52

KENS2	KENNEBEC	SD	0.52E	0.52
PAHS2	KEYAPAHA, KEYAPAHA R	SD	0.52E	0.52
KMBS2	KIMBALL 11SSE	SD	0.52E	0.52
COBO143	LONGMONT 2N	CO	0.52	0.52
MCRW4	MILL CREEK RAWS	WY	0.52	0.52
MRLN1	MORRILL WELL	NE	0.52E	0.52
MOVI4	MOVILLE	IA	0.52E	0.52
MLKN1	MURRAY LAKE	NE	0.52E	0.52
NPLN1	NO PLATTE EXP FARM	NE	0.52	0.52
ODEI4	ODEBOLT	IA	0.52E	0.52
SLBI4	STORM LAKE 2E	IA	0.52E	0.52
TILN1	TILDEN	NE	0.52E	0.52
ARCN1	ARCADIA	NE	0.51	0.51
BLNS2	BLUNT 6E	SD	0.51E	0.51
BTNC2	BRIGHTON	CO	0.51E	0.51
CRCN1	CARPENTER RANCH	NE	0.51	0.51
HRSI4	HARRIS	IA	0.51E	0.51
LHX	LA JUNTA 4NNE	CO	0.51	0.51
LMRN1	LAMAR 3SSE	NE	0.51E	0.51
LGNC2	LONGMONT 2W	CO	0.51E	0.51
LMTC2	LONGMONT 6NW	CO	0.51E	0.51
SCOT022	MITCHELL 2WNW	NE	0.51E	0.51
PIER008	PIERCE 9W	NE	0.51E	0.51
SOUI4	SIOUX CITY 8N	IA	0.51E	0.51
WHEI1	WHITE ELEPHANT	ID	0.51E	0.51
WODN1	WOOD RIVER 1NNW	NE	0.51E	0.51
BTLI4	BATTLE CREEK 3NE	IA	0.50E	0.50
BATS2	BATTLE MTN NFS	SD	0.50E	0.50
OSKN1	CRESCENT LAKE REFUGE	NE	0.50E	0.50
DNSI4	DENISON	IA	0.50	0.50
EDTS2	EDGEMONT 13NW	SD	0.50E	0.50
ELKW4	ELKHORN RAWS	WY	0.50	0.50
HTYI4	HARTLEY	IA	0.50E	0.50
HBBW4	HOBBS PARK	WY	0.50	0.50

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HOMN1	HOMER 3NE	NE	0.50E	0.50
IDGI4	IDA GROVE 5NW	IA	0.50E	0.50
LELC2	LAKE ELDORA	CO	0.50	0.50
COJF179	LAKEWOOD 2S	CO	0.50E	0.50
MOSC2	MORRISON	CO	0.50E	0.50
MRRC2	MORRISON, BEAR CREEK	CO	0.50E	0.50
IDHC2	MT EVANS RES STATION	CO	0.50E	0.50
HAFW4	PINEDALE	WY	0.50E	0.50
RELS2	RELIANCE 4NE	SD	0.50E	0.50
SACI4	SAC CITY	IA	0.50	0.50
SSCN1	SOUTH SIOUX CITY	NE	0.50E	0.50
TLRN8	TAYLOR 7NNW	ND	0.50	0.50
TIEW4	TIE CREEK	WY	0.50	0.50
UVCC2	UNIVERSITY CAMP	CO	0.50	0.50
WILW4	WILLOW CREEK	WY	0.50	0.50
BRHN1	BRAINARD	NE	0.49E	0.50
DCKN8	DICKINSON EXP STN	ND	0.49E	0.50

GIDN1	GRAND ISLAND, WOOD R	NE	0.49E	0.50
COB084	LONGMONT 3NW	CO	0.49E	0.50
MINN1	MINDEN	NE	0.49	0.50
OGAS2	OGLALA 1S	SD	0.49E	0.50
PULI4	PAULLINA	IA	0.49E	0.50
PETN1	PETERSBURG	NE	0.49E	0.50
PCRW4	POKER CREEK RAW	WY	0.49	0.50
RRDM8	RED ROCK RAW	MT	0.49E	0.50
TCTM8	TIMBERCREST RAW	MT	0.49	0.50
COB081	BOULDER 3N	CO	0.48E	0.48
BYRI4	BOYER 4SE	IA	0.48E	0.48
BHNC2	BRIGHTON	CO	0.48E	0.48
CFRC2	CONIFER 3W	CO	0.48E	0.48
CRRI4	CORRECTIONVILLE 1SW	IA	0.48E	0.48
COLR223	ESTES PARK 4SSW	CO	0.48E	0.48
COCC11	EVERGREEN 8NW	CO	0.48E	0.48
FLTC2	FLATIRON RESERVOIR	CO	0.48E	0.48
GURW4	GUERNSEY 2NW	WY	0.48E	0.48
HARI4	HARTLEY	IA	0.48E	0.48
HASN1	HAY SPRINGS 12S	NE	0.48E	0.48
PTWM8	PLENTYWOOD 1NE	MT	0.48E	0.48
PGHI4	PRIMGHAR	IA	0.48E	0.48
RAGN1	RAGAN	NE	0.48E	0.48
HITC2	ROCKY MTN ARSENAL	CO	0.48E	0.48
RUSN1	RUSHVILLE	NE	0.48E	0.48
UNDI4	UNDERWOOD	IA	0.48	0.48
UION1	UNION, WEEPING WATER	NE	0.48E	0.48
BTLS2	BATESLAND	SD	0.47E	0.47
BRIC2	BRIGHTON 3SE	CO	0.47	0.47
BKMC2	BUCKHORN MOUNTAIN 1E	CO	0.47E	0.47
BSHN1	BUSHNELL, LODGEPOLE	NE	0.47E	0.47
CHLI4	CLIMBING HILL	IA	0.47E	0.47
ELSN1	ELLSWORTH 15NNE	NE	0.47E	0.47
GIBN1	GIBBON	NE	0.47E	0.47
HLLC2	HIGHLAND DITCH	CO	0.47E	0.47
JMEI4	JAMES 1NE, FLOYD R	IA	0.47E	0.47

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LNGW4	LINGLE, RAWHIDE CR	WY	0.47E	0.47
LNSC2	LYONS, ST VRAIN CR	CO	0.47E	0.47
PTDW4	PATHFINDER DAM	WY	0.47E	0.47
PIRN1	PIERCE #1	NE	0.47	0.47
SILM8	SILVER RUN	MT	0.47E	0.47
COLR252	BELLVUE 1NW	CO	0.46E	0.47
BLTS2	BLUNT 6E	SD	0.46E	0.47
BORC2	BOULDER 8NE	CO	0.46E	0.47
BRAN1	BRADY 1S	NE	0.46E	0.47
BDYN1	BRADY, PLATTE R	NE	0.46E	0.47
CMMC2	COMMERCE CITY 2NE	CO	0.46E	0.47
CRNI4	CORNING	IA	0.46	0.47
ELIN1	ELI	NE	0.46E	0.47
GBBN1	GIBBON 3ENE, WOOD R	NE	0.46E	0.47
HYSN1	HAY SPRINGS	NE	0.46E	0.47

HLI4	HOLLY SPRINGS 1NW	IA	0.46	0.47
SXNI4	JAMES 4W	IA	0.46E	0.47
KSHC2	KENOSHA PASS	CO	0.46E	0.47
LAGW4	LA GRANGE	WY	0.46E	0.47
LEOW4	LEO 6SW	WY	0.46E	0.47
CODG32	LITTLETON 8ESE	CO	0.46E	0.47
LGN1	LODGEPOLE 8N	NE	0.46E	0.47
LONC2	LONGMONT 2ESE	CO	0.46E	0.47
NZLN1	NENZEL 23SSW	NE	0.46E	0.47
LNTC2	PARKER 7WNW AMRAD	CO	0.46E	0.47
RKS	ROCK SPRINGS	WY	0.46	0.47
WRRW4	WARREN PEAK	WY	0.46E	0.47
AFOW4	AFTON EXP FARM	WY	0.45E	0.45
ABNW4	ALBIN #2	WY	0.45E	0.45
ALTI4	ALTON, FLOYD R	IA	0.45E	0.45
CHDN1	CHADRON 3SW	NE	0.45E	0.45
COAR131	CHERRY HILLS VILLAGE	CO	0.45E	0.45
COAR42	DENVER 6S	CO	0.45E	0.45
ESTI4	ESTHERVILLE 2N	IA	0.45	0.45
FLAW4	FT LARAMIE 5SSW	WY	0.45E	0.45
GHOS2	GHOST HAWK LAKE	SD	0.45E	0.45
HMRN1	HOMER, OMAHA CR	NE	0.45E	0.45
FRBS2	KEYSTONE 18SE	SD	0.45E	0.45
COAR90	LITTLETON 1S	CO	0.45E	0.45
MYCI4	MAY CITY	IA	0.45E	0.45
MAYI4	MAY CITY	IA	0.45E	0.45
OFLW4	OLD FORT LARAMIE	WY	0.45	0.45
PRCN1	PIERCE 2SE	NE	0.45E	0.45
PCPS2	PLATTE 8SW, PLATTE C	SD	0.45E	0.45
SARW4	SARATOGA	WY	0.45E	0.45
SRAW4	SARATOGA, N PLATTE R	WY	0.45	0.45
CHER007	VALENTINE 10WNW	NE	0.45E	0.45
YTNN1	YUTAN	NE	0.45E	0.45
ALBW4	ALBIN	WY	0.44E	0.44
BDDN1	BARTLEY 4SSW	NE	0.44E	0.44
BNNC2	BENNETT 2SE	CO	0.44E	0.44
0759N8	DICKINSON 2NW	ND	0.44E	0.44
LKSS2	FORT THOMPSON	SD	0.44E	0.44

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GILI4	GILLETTE GROVE	IA	0.44E	0.44
JPSN1	HARRISON 4NW	NE	0.44E	0.44
KAYW4	KAYCEE, MID POWDER R	WY	0.44	0.44
MIW	MARSHALLTOWN AIRPORT	IA	0.44	0.44
MIES2	MILLER 10S	SD	0.44E	0.44
MDGW4	MUDDY GAP	WY	0.44E	0.44
ORCI4	ORANGE CITY	IA	0.44	0.44
OXFN1	OXFORD 6NNW	NE	0.44	0.44
NEBS2	PINE RIDGE, WHITE R	SD	0.44E	0.44
PLVN1	PLAINVIEW	NE	0.44E	0.44
RNDN1	RANDOLPH 6S	NE	0.44E	0.44
SFWW4	SARATOGA HATCHERY	WY	0.44E	0.44
SCHN1	SCHUYLER	NE	0.44E	0.44

BERS2	WANBLEE 9WSW	SD	0.44E	0.44
AIA	ALLIANCE	NE	0.43	0.44
EMTS2	EDGEMONT	SD	0.43	0.44
LORI4	LORIMOR	IA	0.43	0.44
LCRM7	LUCERNE, MEDICINE CR	MO	0.43E	0.44
LSKW4	LUSK 2SW	WY	0.43E	0.44
ODX	ORD	NE	0.43	0.44
PHLN1	PHILLIPS 4SE	NE	0.43E	0.44
PINW4	PINEDALE 1NE	WY	0.43E	0.44
RWCIA	ROCKWELL CITY #2	IA	0.43E	0.44
SUX	SIOUX CITY	IA	0.43	0.44
STON1	STANTON 7NE	NE	0.43	0.44
BRPN1	BRIDGEPORT	NE	0.42E	0.42
BGPN1	BRIDGEPORT, N PLATTE	NE	0.42E	0.42
CEDN1	CEDAR RAPIDS	NE	0.42E	0.42
CDR	CHADRON	NE	0.42	0.42
COLN1	COLUMBUS 3NE	NE	0.42E	0.42
CRBI1	CRAB CREEK	ID	0.42E	0.42
EDGS2	EDGEMONT, CHEYENNE R	SD	0.42E	0.42
WYJN13	KAYCEE 17NNW	WY	0.42	0.42
MRSC2	MORRISON 3SSE AMRAD	CO	0.42E	0.42
OTOI4	OTO	IA	0.42E	0.42
PLGN1	PILGER, ELKHORN R	NE	0.42E	0.42
REDM8	RED LODGE 6SSW	MT	0.42E	0.42
REHS2	REE HEIGHTS	SD	0.42E	0.42
RHTS2	REE HEIGHTS	SD	0.42E	0.42
WTRC2	WATERDALE	CO	0.42	0.42
WLDN8	WILDROSE 3NW	ND	0.42E	0.42
WMM8	WYOLA 11E	MT	0.42	0.42
ANTN1	ANTIOCH	NE	0.41E	0.41
BWPM8	BILLINGS WATER PLANT	MT	0.41E	0.41
DTWN1	DALTON 13W	NE	0.41E	0.41
CWCC2	EMPIRE 2SE, CLEAR CR	CO	0.41E	0.41
GSHW4	GAS HILLS 4E	WY	0.41E	0.41
GRIN1	GRAND ISLAND 5SE	NE	0.41E	0.41
GRSN1	GRESHAM 3W	NE	0.41E	0.41
COB085	LYONS 1NNW	CO	0.41E	0.41
LITS2	MARTIN, LTL WHITE R	SD	0.41	0.41
PRGS2	PINE RIDGE RAWS	SD	0.41E	0.41
PVRN1	PLAINSVIEW RANCH	NE	0.41E	0.41

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SHER003	RUSHVILLE 13S	NE	0.41E	0.41
WYGS2	TORRINGTON 5SSW	WY	0.41E	0.41
PERK005	VENANGO	NE	0.41E	0.41
WRVW4	WIND RIVER	WY	0.41E	0.41
ALDN1	ALDA 1SW, WOOD R	NE	0.40E	0.41
ALIN1	ALLIANCE 1WNW	NE	0.40E	0.41
BCHN8	BEACH 9SE	ND	0.40E	0.41
BTXW4	BLACK MOUNTAIN	WY	0.40E	0.41
BRJW4	BURGESS JUNCTION	WY	0.40	0.41
BRCW4	BURROUGHS CREEK	WY	0.40	0.41
CARW4	CARPENTER 3N	WY	0.40E	0.41

WBMN1	CHADRON 3NE	NE	0.40E	0.41
CHMN1	CHAMBERS	NE	0.40	0.41
CLMM7	COLOMA	MO	0.40	0.41
CONC2	CONIFER	CO	0.40E	0.41
DIVM8	DIVIDE	MT	0.40	0.41
DKEC2	DRAKE, BIG THOMPSON	CO	0.40	0.41
DKKC2	DRAKE, NORTH FORK	CO	0.40E	0.41
ECLC2	ECHO LAKE	CO	0.40	0.41
FTMM8	FLATTOP MOUNTAIN	MT	0.40	0.41
FTNM8	FLATTOP MTN SNT	MT	0.40E	0.41
GSNN8	GARRISON	ND	0.40	0.41
HNSW4	HANSEN SAWMILL	WY	0.40	0.41
ISWI1	ISLAND PARK	ID	0.40E	0.41
ISPI1	ISLAND PARK 9ENE	ID	0.40	0.41
KLLW4	KELLEY	WY	0.40	0.41
THUC2	LYONS 7S	CO	0.40E	0.41
MRTS2	MARTIN	SD	0.40E	0.41
OTCW4	OREGON TRAIL CROSSIN	WY	0.40E	0.41
SXGI4	SIOUX CITY	IA	0.40	0.41
SLAW4	ST LAWRENCE	WY	0.40	0.41
NLWW4	WASHAKIE, LTL WIND R	WY	0.40E	0.41
WACN8	WATFORD CITY 12E	ND	0.40E	0.41
YOUW4	YOUNTS PEAK	WY	0.40	0.41
COPK69	BAILEY 6NNW	CO	0.39E	0.39
BTMC2	BATTLEMENT MESA	CO	0.39E	0.39
BGPS2	BUFFALO GAP	SD	0.39E	0.39
DUNK1	DUNLAP 2N	KS	0.39E	0.39
DLPK1	DUNLAP 2N	KS	0.39	0.39
GTNM8	GALLATIN GATEWAY	MT	0.39E	0.39
GEOC2	GEORGETOWN	CO	0.39E	0.39
GTYS2	GETTYSBURG 13W	SD	0.39E	0.39
GJT	GRAND JUNCTION	CO	0.39	0.39
HSBN1	HARRISBURG 12WNW	NE	0.39E	0.39
HRNN1	HARRISON	NE	0.39E	0.39
HLDS2	HARROLD 12SSW	SD	0.39E	0.39
HCLW4	HECLA 1E	WY	0.39E	0.39
LIVC2	LIVERMORE, POUDRE R	CO	0.39E	0.39
MNTN1	MINATARE, NO PLATTE	NE	0.39E	0.39
NBDN1	NORTH BEND, PLATTE R	NE	0.39E	0.39
ORDN1	ORD, NORTH LOUP R	NE	0.39	0.39
PPLN1	PAPILLION	NE	0.39	0.39
PWBN1	PAPILLION #2	NE	0.39E	0.39

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STATION			PERIOD
ID	DESCRIPTION	STATE	SUM
SGOM8	SHENANGO RAWS	MT	0.39
SLWW4	ST LAWRENCE RANG STA	WY	0.39E
TNSW4	TEN SLEEP 16SSE	WY	0.39E
BIL	BILLINGS INTL AP	MT	0.38
BSBM8	BUSBY	MT	0.38E
DTUC2	DRAKE 5E	CO	0.38E
BIMC2	DRAKE, BIG THOMPSON	CO	0.38E
EDMS2	EDGEMONT (AMRAD)	SD	0.38E
RDCS2	EDGEMONT 7NE	SD	0.38E

EPIC2	EMPIRE	CO	0.38E	0.38
GRAN1	GRETNA 4NE	NE	0.38	0.38
HRTN1	HARTINGTON	NE	0.38	0.38
COLR250	LIVERMORE 11WSW	CO	0.38E	0.38
MALI4	MALVERN	IA	0.38E	0.38
PNDW4	PINEDALE	WY	0.38E	0.38
RSBS2	ROSEBUD 6N	SD	0.38E	0.38
SNBI4	SANBORN	IA	0.38E	0.38
YNTW4	YOUNTS PEAK	WY	0.38E	0.38
ALAN1	ALLIANCE 1WNW	NE	0.37E	0.38
BAKM8	BAKER	MT	0.37E	0.38
BHK	BAKER	MT	0.37	0.38
BYZ	BILLINGS WFO	MT	0.37E	0.38
CINI4	CARROLL	IA	0.37	0.38
CHFC2	CEDAR COVE 2E	CO	0.37E	0.38
OLU	COLUMBUS	NE	0.37E	0.38
GTNC2	GEORGETOWN, CLEAR CR	CO	0.37E	0.38
HEMN1	HEMINGFORD	NE	0.37E	0.38
HSKN1	HOSKINS	NE	0.37E	0.38
HOSI4	HOSPERS	IA	0.37E	0.38
KIMS2	KIMBALL (AMRAD)	SD	0.37E	0.38
WYGS16	LA GRANGE 4ESE	WY	0.37	0.38
MTHN8	MARMARTH	ND	0.37E	0.38
CAMW4	MUDDY GAP 7SSW	WY	0.37E	0.38
PCUS2	PORCUPINE	SD	0.37	0.38
ARAW4	RIVERTON 7SW	WY	0.37E	0.38
RHVI4	RUTHVIN	IA	0.37E	0.38
LINC027	STAPLETON 8SSE	NE	0.37E	0.38
ALCN1	ALLIANCE 8SSW	NE	0.36	0.37
AGRN1	ANGORA 1WNW	NE	0.36E	0.37
BRKM7	BROOKFIELD	MO	0.36	0.37
BEKM7	BROOKFIELD	MO	0.36E	0.37
DDGN1	DODGE	NE	0.36E	0.37
EGMS2	EDGEMONT 23NNW	SD	0.36E	0.37
ESPC2	ESTES PARK 4WNW	CO	0.36	0.37
GLDW4	GLENDO RESERVOIR	WY	0.36E	0.37
MIMN1	HARRISON 9NE	NE	0.36E	0.37
ZIMN1	HARRISON 9NE	NE	0.36E	0.37
IRHW4	IRISH ROCK	WY	0.36E	0.37
KCEW4	KAYCEE	WY	0.36E	0.37
KNEN8	KEENE 3S	ND	0.36E	0.37
COWE265	KEENESBURG 5E	CO	0.36E	0.37
KBLS2	KIMBALL	SD	0.36E	0.37
KYLS2	KYLE	SD	0.36E	0.37

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ID	DESCRIPTION	STATE	06/20	SUM
LESN1	LESHARA, PLATTE R	NE	0.36E	0.37
LGM2	LONGMONT 2NE AMRAD	CO	0.36E	0.37
PLKS2	PLANKINTON	SD	0.36E	0.37
PRGN1	PRAGUE	NE	0.36	0.37
SEWS2	RAPID CITY 7SE	SD	0.36	0.37
SIXI4	SIOUX CENTER 2SE	IA	0.36E	0.37
SWLM8	SWAN LAKE	MT	0.36E	0.37

TRUW4	TROUT CREEK	WY	0.36E	0.37
VBVS2	VICTORIA DAM	SD	0.36	0.37
ARDS2	ARDMORE 2N	SD	0.35E	0.35
BNYC2	BONNY DAM	CO	0.35E	0.35
BRLM7	BURLINGTON JCT 1W	MO	0.35E	0.35
CCSW4	CASTLE CREEK SNOTEL	WY	0.35E	0.35
CSRN1	CASTLE ROCK	NE	0.35E	0.35
CCLC2	GEORGETOWN 5SSW	CO	0.35E	0.35
GTOM8	GOAT HAUNT MOUNTAIN	MT	0.35E	0.35
HYRW4	HYATT RANCH	WY	0.35E	0.35
JKSNI	JACKSON	NE	0.35E	0.35
MRMN8	MARMARTH	ND	0.35E	0.35
PURN1	PURDUM	NE	0.35E	0.35
SUNW4	SUNSHINE 3NE	WY	0.35E	0.35
COAD104	BARR LAKE 2E	CO	0.34E	0.34
BNSI4	BRONSON	IA	0.34E	0.34
BURW4	BURGESS JUNCTION	WY	0.34E	0.34
BUJW4	BURGESS RAWS	WY	0.34	0.34
BRLN1	BURWELL, CALAMUS R	NE	0.34E	0.34
CRON1	CAIRO 5S	NE	0.34E	0.34
CPTS2	CAPUTA 1SW	SD	0.34E	0.34
CUT	CUSTER	SD	0.34	0.34
FARS2	FARMINGDALE, RAPID C	SD	0.34E	0.34
GCOS2	GRACE COOLIDGE CR	SD	0.34E	0.34
GRTN1	GRETNA 3ESE	NE	0.34E	0.34
GUEW4	GUERNSEY DAM	WY	0.34E	0.34
HSYN1	HALSEY 2W	NE	0.34	0.34
HCHN1	HARRISBURG 10NW	NE	0.34	0.34
HERS2	HERMOSA, BATTLE CR	SD	0.34	0.34
IRRS2	INTERIOR, WHITE R	SD	0.34	0.34
KRKM7	KIRKSVILLE (KIRX)	MO	0.34	0.34
CEFM8	LIMA 36ENE	MT	0.34E	0.34
LTGW4	LITTLE GOOSE CREEK	WY	0.34	0.34
LDGM8	LODGE GRASS	MT	0.34E	0.34
OFK	NORFOLK AIRPORT	NE	0.34	0.34
NFKN1	NORFOLK, ELKHORN R	NE	0.34E	0.34
FSNN1	OMAHA AIRPORT	NE	0.34E	0.34
PKCW4	POCKET CREEK SNOTEL	WY	0.34E	0.34
REES2	REE HEIGHTS	SD	0.34E	0.34
WESN1	WESTON 3NW	NE	0.34E	0.34
GCRC2	CABIN CREEK	CO	0.33	0.34
CRRS2	CUSTER 2SW RAWS	SD	0.33E	0.34
TRTC2	DECKERS, TROUT CR	CO	0.33E	0.34
COLR225	DRAKE 3NNE	CO	0.33E	0.34
RCA	ELLSWORTH AFB	SD	0.33	0.34
ELLN1	ELSMERE 9ENE	NE	0.33E	0.34

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N60	GARRISON 1W	ND	0.33	0.34
GEVC2	GOLDEN 4SW	CO	0.33E	0.34
GORN1	GORDON 6N	NE	0.33E	0.34
HSCS2	HERMOSA 7N	SD	0.33E	0.34
INTS2	INTERIOR 3NE	SD	0.33E	0.34

LEWN1	LEWELLEN, NO PLATTE	NE	0.33E	0.34
NWDW4	LOST CABIN 19NE	WY	0.33E	0.34
MERN1	MERRIMAN	NE	0.33E	0.34
NWEN8	NEW ENGLAND	ND	0.33E	0.34
NWTW4	NEWCASTLE 6SE	WY	0.33E	0.34
NOFN1	NORFOLK 2N	NE	0.33E	0.34
NOVC2	RAYMER 2N	CO	0.33E	0.34
SPFN1	SPRINGFIELD	NE	0.33E	0.34
WTON1	WATERLOO	NE	0.33E	0.34
BEAS2	BUFFALO GAP 2S	SD	0.32E	0.32
DYTW4	DAYTON	WY	0.32E	0.32
ELRN1	ELLSWORTH 24NNE	NE	0.32E	0.32
GNTM7	GRANT CITY	MO	0.32E	0.32
0063N8	GRASSY BUTTE 9SE	ND	0.32E	0.32
HNDC2	HENDERSON, S PLATTE	CO	0.32	0.32
PKRW4	KAYCEE 20W	WY	0.32E	0.32
LTTC2	LITTLETON	CO	0.32E	0.32
PCMW4	MAYOWORTH, POWDER R	WY	0.32	0.32
MCGN1	MCGREW 4WNW	NE	0.32E	0.32
HRAN8	NEW HRADEC, GREEN R	ND	0.32E	0.32
OKSN1	OSHKOSH 10NE	NE	0.32E	0.32
BRSW4	PINEDALE 14SE	WY	0.32E	0.32
PLEM8	PLEVNA	MT	0.32E	0.32
RAP	RAPID CITY	SD	0.32	0.32
RELM8	RED LODGE	MT	0.32E	0.32
WHEE006	SPALDING 6N	NE	0.32E	0.32
WHBW4	WHALEN DAM	WY	0.32E	0.32
WHAW4	WHALEN DAM (USBR)	WY	0.32E	0.32
BHMM8	WYOLA 25WSW	MT	0.32	0.32
BKCI4	AKRON 11E	IA	0.31E	0.31
FHFM8	ASHLAND 12SSE	MT	0.31	0.31
BPSC2	BERTHOUD PASS	CO	0.31E	0.31
CAIN1	CAIRO 5S	NE	0.31E	0.31
CFDC2	CHATFIELD DAM	CO	0.31E	0.31
DECM8	DECKER	MT	0.31E	0.31
GSDN1	GRETNA 3NE	NE	0.31E	0.31
HMKW4	HAMS FORK	WY	0.31E	0.31
FRAN002	HILDRETH 5SSE	NE	0.31E	0.31
COPH33	HOLYOKE 13SE	CO	0.31E	0.31
MSNI4	MASSENA	IA	0.31E	0.31
PCMI4	MERRILL 6SW	IA	0.31E	0.31
MROS2	MURDO 7WSW	SD	0.31E	0.31
RYLI4	ROYAL	IA	0.31E	0.31
FWGC2	WINTER PARK 4SSE	CO	0.31E	0.31
ANGN1	ANGORA 8NE	NE	0.30E	0.31
AROC2	ARROW	CO	0.30	0.31
BCKN1	BATTLE CREEK	NE	0.30E	0.31
BTSC2	BERTHOUD SUMMIT	CO	0.30	0.31

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STATION				PERIOD
ID	DESCRIPTION	STATE	06/20	SUM
BGEW4	BIG GOOSE	WY	0.30	0.31
BHRW4	BIG HORN	WY	0.30E	0.31
BGSW4	BIG SANDY OPENING	WY	0.30	0.31

BLWW4	BLACKWATER	WY	0.30	0.31
BLON1	BLOOMFIELD	NE	0.30	0.31
BSDW4	BONE SPRINGS DIVIDE	WY	0.30	0.31
CLCM8	COLE CREEK	MT	0.30	0.31
COOC2	COMO 4SE	CO	0.30E	0.31
CWDS2	COTTONWOOD 2E	SD	0.30E	0.31
CRTI4	CRESTON 2SW	IA	0.30	0.31
DAZM8	DAISY PEAK	MT	0.30	0.31
DPKW4	DEER PARK	WY	0.30	0.31
DVDW4	DIVIDE PEAK	WY	0.30	0.31
DUBW4	DUBOIS, WIND R	WY	0.30	0.31
DFTN1	DUTCH FLATS WELL	NE	0.30E	0.31
ERDW4	EAST RIM DIVIDE	WY	0.30	0.31
EMRN1	EMERSON	NE	0.30E	0.31
EVNW4	EVENING STAR	WY	0.30	0.31
GNDM8	GLEN DIVE	MT	0.30E	0.31
GLNM8	GLEN DIVE, YELLOWSTONE	MT	0.30	0.31
ABNN1	HARRISBURG 19SW	NE	0.30E	0.31
IDSC2	IDAHO SPRINGS 1NNW	CO	0.30E	0.31
JWGC2	JACKWHACKER GULCH	CO	0.30	0.31
KNDW4	KENDALL	WY	0.30	0.31
KSTS2	KEYSTONE, SPRING CR	SD	0.30E	0.31
LDRW4	LANDER 3W	WY	0.30E	0.31
LBAC2	LOVELAND BASIN	CO	0.30	0.31
NRVC2	NEW RAYMER	CO	0.30E	0.31
PHLS2	PHILLIP 1S	SD	0.30E	0.31
SHRM5	SHERBURN 3WSW	MN	0.30E	0.31
SHBW4	SHERIDAN, GOOSE CR	WY	0.30	0.31
SPKN1	SPARKS, NIOBRARA R	NE	0.30E	0.31
COLR404	STOVE PRAIRIE 3SSE	CO	0.30E	0.31
TPEM8	TEPEE CREEK	MT	0.30	0.31
DKRM8	TONGUE RIVER DAM	MT	0.30E	0.31
WRMM8	WARM SPRINGS	MT	0.30	0.31
MSRC2	WELLINGTON 17NNE	CO	0.30E	0.31
WNDW4	WINDY PEAK	WY	0.30	0.31
SNDW4	BEULAH 2S, SAND CR	WY	0.29E	0.29
CUTS2	CUSTER (AMRAD)	SD	0.29E	0.29
DSLM8	DECKER 2SE	MT	0.29E	0.29
GAVS2	GANN VALLEY 9NW	SD	0.29E	0.29
GOLC2	GOLDEN 3S	CO	0.29E	0.29
HRSC2	HORSETOOTH RESERVOIR	CO	0.29E	0.29
HUMN1	HUMPHREY	NE	0.29E	0.29
JEFW4	JEFFREY CITY	WY	0.29	0.29
LDM7	LAREDO, MEDICINE CR	MO	0.29	0.29
LGSW4	LITTLE GOOSE SNOTEL	WY	0.29E	0.29
LYMI4	LYMAN	IA	0.29E	0.29
PADC2	PADRONI	CO	0.29E	0.29
PTTS2	PLATTE (AMRAD)	SD	0.29E	0.29
RWL	RAWLINS	WY	0.29	0.29
RLSW4	RAWLINS 1N	WY	0.29E	0.29

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RLNW4	RAWLINS 1NE	WY	0.29E 0.29

WYSH1	SHERIDAN 1N	WY	0.29E	0.29
WYSH14	SHERIDAN 2NW	WY	0.29E	0.29
ANDW4	SOUTH PASS CITY 8WSW	WY	0.29E	0.29
SDCW4	SUNDANCE 8NNW	WY	0.29E	0.29
TRON8	TROTTERS 3SSE	ND	0.29E	0.29
BTLN1	BARTLETT 1S	NE	0.28E	0.28
BBLN8	BOWBELLS	ND	0.28E	0.28
BFGS2	BUFFALO GAP,CHEYENNE	SD	0.28E	0.28
BGFS2	BUFFALO GAP,CHEYENNE	SD	0.28E	0.28
CHRW4	CHRISTINA LAKE	WY	0.28E	0.28
CKVC2	CLARKVILLE 1N	CO	0.28E	0.28
CTTS2	COTTONWOOD, SF BAD R	SD	0.28	0.28
CSPS2	CUSTER 12ESE RAWS	SD	0.28E	0.28
HIGC2	DENVER	CO	0.28E	0.28
EWGN1	EWING	NE	0.28E	0.28
FRUC2	FRASER 10SE	CO	0.28E	0.28
HANW4	HANNA, MEDICINE BOW	WY	0.28	0.28
HRRN1	HARRISON 9W	NE	0.28E	0.28
HMGN1	HEMINGFORD 10SW	NE	0.28E	0.28
HOLC2	HOLYOKE 3SSW	CO	0.28	0.28
GNKS2	KEYSTONE 1SW	SD	0.28	0.28
LANW4	LANDER, POPO AGIE R	WY	0.28E	0.28
MBFW4	MEDICINE BOW	WY	0.28E	0.28
OMA	OMAHA EPPLEY FIELD	NE	0.28	0.28
ONLN1	ONEILL	NE	0.28	0.28
EKCS2	RAPID CITY, ELK CR	SD	0.28E	0.28
RDWS2	REDWATER CREEK	SD	0.28	0.28
RHKW4	ROCHELLE HILLS RAWS	WY	0.28	0.28
ROBS2	ROUBAIX, ELK CREEK	SD	0.28	0.28
SHDI4	SHELDON	IA	0.28	0.28
SHLI4	SHELDON 1N, FLOYD R	IA	0.28E	0.28
SFSW4	SHERIDAN 7NW	WY	0.28E	0.28
VTNN1	VALENTINE 4SSE	NE	0.28E	0.28
WLDM8	WILDROSE 3NW	MT	0.28E	0.28
WYLM8	WYOLA 1SW	MT	0.28E	0.28
ACYS2	ACADEMY 2NE	SD	0.27E	0.28
DDNW4	ALADDIN 6NW	WY	0.27E	0.28
AMDN8	AMIDON 12NW	ND	0.27E	0.28
BRDS2	BEAR RIDGE	SD	0.27E	0.28
BWLN1	BURWELL	NE	0.27E	0.28
BSHK1	BUSHONG 5W	KS	0.27E	0.28
CLLM8	CARLYLE 13NW	MT	0.27E	0.28
CLRN1	CLEARWATER, CLRWTR	NE	0.27E	0.28
CLEN1	COLERIDGE	NE	0.27E	0.28
GUFC2	GUFFEY 10SE	CO	0.27E	0.28
LASS2	HARROLD 28S	SD	0.27E	0.28
HOWN1	HOWELLS	NE	0.27E	0.28
LNRW4	LANDER 1N	WY	0.27E	0.28
COMR63	LEEDER 10N	CO	0.27E	0.28
EHNC2	LIVERMORE, POUDRE R	CO	0.27E	0.28
MMON1	MALMO 3E	NE	0.27E	0.28
MRLI4	MERRILL, FLOYD R	IA	0.27E	0.28

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MIFI4	MILFORD, LTL SIOUX R	IA	0.27E	0.28
PAES2	PARMELEE 7SSW	SD	0.27E	0.28
RCH	RED CANYON	WY	0.27E	0.28
SLGW4	SHERIDAN, GOOSE CR	WY	0.27E	0.28
STKS2	STICKNEY	SD	0.27E	0.28
SNZM7	SUMNER 2SW, GRAND R	MO	0.27E	0.28
SMNM7	SUMNER 3SW	MO	0.27E	0.28
VTN	VALENTINE	NE	0.27	0.28
VTLS2	VETAL, LTL WHITE R	SD	0.27E	0.28
WTMC2	WESTMINSTER	CO	0.27E	0.28
WLSN1	WILSONVILLE	NE	0.27E	0.28
BVCN1	BEAVER CITY	NE	0.26E	0.26
BGSM8	BIG SKY 2WNW	MT	0.26E	0.26
BNLN1	BROWNLEE	NE	0.26E	0.26
CAMM7	CAMERON	MO	0.26	0.26
CYNS2	CANYON LAKE ABOVE	SD	0.26E	0.26
CUSS2	CUSTER	SD	0.26E	0.26
DIKI4	DICKENS	IA	0.26E	0.26
EXSM7	EXCELSIOR SPRINGS 4S	MO	0.26	0.26
MTDN1	FLAXVILLE 5E	MT	0.26E	0.26
HOYC2	HOYT 1S	CO	0.26E	0.26
SPWW4	KEARNY 12WSW	WY	0.26	0.26
MLBW4	LANDER 2SSW	WY	0.26E	0.26
LND	LANDER AIRPORT	WY	0.26	0.26
LEBI4	LEBANON 4SE	IA	0.26E	0.26
MAXN8	MAX	ND	0.26E	0.26
MBOW4	MEDICINE BOW	WY	0.26E	0.26
MMLN1	MILLER	NE	0.26	0.26
MLLN1	MILLER	NE	0.26E	0.26
RNMS2	MT RUSHMORE NATL MEM	SD	0.26E	0.26
NFLN1	NORFOLK 4W	NE	0.26	0.26
OSHN1	OSHKOSH	NE	0.26E	0.26
TNDW4	TOWNSEND CREEK	WY	0.26E	0.26
TWNW4	TOWNSEND CREEK	WY	0.26E	0.26
VALN1	VALENTINE NWR	NE	0.26E	0.26
AMEN1	AMELIA	NE	0.25E	0.25
AMW	AMES AIRPORT	IA	0.25	0.25
BNTN1	BENNINGTON 3WSW	NE	0.25	0.25
BLBW4	BUFFALO BILL DAM	WY	0.25E	0.25
BUWW4	BUFORD 6W	WY	0.25E	0.25
CRWN1	CRAWFORD	NE	0.25E	0.25
CRFN1	CROFTON	NE	0.25E	0.25
WYFM4	DUBOIS 10WNW	WY	0.25E	0.25
EVNC2	ELEVENMILE RESERVOIR	CO	0.25E	0.25
SPDC2	ENGLEWOOD	CO	0.25E	0.25
KILN8	KILLDEER 8NW	ND	0.25E	0.25
LGRC2	LAKE GEORGE	CO	0.25	0.25
TNMC2	LAKE GEORGE 5SW	CO	0.25E	0.25
LCRW4	LARSEN CREEK SNOTEL	WY	0.25E	0.25
MTJ	MONTROSE AIRPORT	CO	0.25	0.25
NPTN1	NORTH PLATTE	NE	0.25E	0.25
NPCN1	NORTHPORT CANAL	NE	0.25E	0.25
OVNN1	OMAHA 9NW	NE	0.25E	0.25

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STATION ID	DESCRIPTION	STATE	06/20	PERIOD SUM
OSMN1	OSMOND	NE	0.25E	0.25
PSBN1	PAPILLION 6NW	NE	0.25E	0.25
MLDN1	PAPIO CREEK DAM	NE	0.25E	0.25
PNHM8	PINE HILL RAWS	MT	0.25E	0.25
RAVS2	RAPID CITY 11SW	SD	0.25E	0.25
HCGS2	RAPID CITY 8W	SD	0.25E	0.25
CHRS2	REDSHIRT, CHEYENNE R	SD	0.25	0.25
RKVI4	ROCK VALLEY, ROCK R	IA	0.25	0.25
SCES2	SCENIC 9NE	SD	0.25E	0.25
SIBI4	SIBLEY 3NE	IA	0.25	0.25
SPOI4	SPENCER, OCHEYEDAN R	IA	0.25	0.25
VNOC2	VERNON 4E	CO	0.25E	0.25
VDAC2	VIRGINIA DALE 7ENE	CO	0.25	0.25
WEBM8	WEBSTER 3E	MT	0.25E	0.25
WGTC2	WELLINGTON 5WNW	CO	0.25E	0.25
WTCK1	WHITE CITY	KS	0.25	0.25
BALC2	BAILEY 5N	CO	0.24E	0.24
MORR013	BAYARD 6SE	NE	0.24E	0.24
GSWM8	BIG SKY 3S	MT	0.24E	0.24
COB082	BOULDER 5E	CO	0.24E	0.24
HATS2	EDGEMONT, HAT CR	SD	0.24	0.24
FAIN8	FAIRFIELD	ND	0.24E	0.24
FSNW4	FARSON 5N	WY	0.24E	0.24
FRAC2	FRASER 6W	CO	0.24E	0.24
HNKI4	HANCOCK, WEST NISH	IA	0.24E	0.24
HTRC2	HORSETOOTH RESERVOIR	CO	0.24E	0.24
KEYS2	KEYSTONE	SD	0.24E	0.24
GAKS2	KEYSTONE 4SW	SD	0.24E	0.24
MSNS2	MISSION 14S	SD	0.24E	0.24
NEBN1	NEBRASKA CITY	NE	0.24E	0.24
NCYN1	NEBRASKA CITY 2NW	NE	0.24E	0.24
OSMN1	OSMOND	NE	0.24E	0.24
SBLI4	SIBLEY	IA	0.24E	0.24
SPWI4	SPENCER, LTL SIOUX R	IA	0.24E	0.24
SPBM8	SPOTTED BEAR RAWS	MT	0.24E	0.24
UPDN1	UPLAND 4NE	NE	0.24E	0.24
VLRW4	VALLEY 9NNE	WY	0.24E	0.24
BETS2	BETHLEHEM CAVE	SD	0.23E	0.23
BLYW4	BILLY CREEK	WY	0.23E	0.23
BIRM8	BIRNEY	MT	0.23E	0.23
BWBN8	BOWBELLS 1N	ND	0.23E	0.23
BYDW4	BOYD RIDGE RAWS	WY	0.23E	0.23
TPGC2	COMO, TARRYALL CR	CO	0.23E	0.23
RIPS2	DEADMAN GULCH	SD	0.23	0.23
DFRW4	DOUBLE FOUR RANCH	WY	0.23E	0.23
DBOW4	DUBOIS, WIND R	WY	0.23E	0.23
FOD	FT DODGE	IA	0.23E	0.23
GARN8	GARRISON DAM	ND	0.23E	0.23
HDRN1	HADAR #2	NE	0.23E	0.23
HADN1	HADAR 1SE	NE	0.23E	0.23
HRTW4	HARTVILLE 7NNE	WY	0.23E	0.23
SBRM8	HUNTLEY EXP STATION	MT	0.23E	0.23
RUSS2	KEYSTONE 5SE	SD	0.23E	0.23

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STATION				PERIOD
ID	DESCRIPTION	STATE	06/20	SUM
LKPI4	LAKE PARK	IA	0.23E	0.23
MBG	MOBRIDGE	SD	0.23	0.23
HOLT008	PAGE 5WNW	NE	0.23E	0.23
PNNS2	PINNACLES RANGER STA	SD	0.23E	0.23
RCWS2	RAPID CITY 4SW	SD	0.23E	0.23
ECHS2	RAPID CITY 5W	SD	0.23	0.23
RYLN1	ROYAL	NE	0.23E	0.23
SRGN1	SARGENT	NE	0.23E	0.23
SCNS2	SCENIC, CHEYENNE R	SD	0.23	0.23
YKN	YANKTON	SD	0.23	0.23
YTNS2	YANKTON 2E	SD	0.23	0.23
YANS2	YANKTON, MISSOURI R	SD	0.23E	0.23
YMAC2	YUMA 10NW	CO	0.23	0.23
GCAW4	ACME, GOOSE CREEK	WY	0.22E	0.22
ANGS2	ANGOSTURA DAM BELOW	SD	0.22	0.22
DOHS2	BAKER PARK RAWS	SD	0.22E	0.22
ROCK002	BASSETT 14SE	NE	0.22E	0.22
BEVN1	BEAVER CITY 4WSW	NE	0.22E	0.22
BHKC2	BLACK HAWK 6SE	CO	0.22E	0.22
BOHN1	BOYSTOWN #2	NE	0.22E	0.22
BGWN1	BRIDGEPORT 18WSW	NE	0.22E	0.22
MNKI4	BRUNSVILLE	IA	0.22E	0.22
CFTN1	CROFTON 8N	NE	0.22E	0.22
EPPN8	EPPING	ND	0.22E	0.22
FRZC2	FRASER	CO	0.22E	0.22
GPDN1	GAVINS PT DAM	NE	0.22E	0.22
COCC15	IDAHO SPRINGS 1NNE	CO	0.22E	0.22
KLLN8	KILLDEER	ND	0.22	0.22
MHK	MANHATTAN MUNICPL AP	KS	0.22	0.22
COLR253	MASONVILLE 8NW	CO	0.22E	0.22
MDCM8	MEDICINE LAKE 3SE	MT	0.22E	0.22
MWTW4	MIDWEST	WY	0.22E	0.22
MFRI4	MILFORD 4NW	IA	0.22E	0.22
Y26	MOBRIDGE 2NNW	SD	0.22E	0.22
RIVN8	RIVERDALE	ND	0.22E	0.22
BUDS2	ROSEBUD LAKE	SD	0.22E	0.22
SPW	SPENCER	IA	0.22	0.22
SPVN1	SPRINGVIEW	NE	0.22	0.22
STAN1	STAPLETON 5W	NE	0.22	0.22
TRTN8	TROTTERS, BEAVER CR	ND	0.22E	0.22
VDLN1	VERDEL 6SSE	NE	0.22	0.22
VRDN1	VERDEL, NIOBRARA R	NE	0.22E	0.22
WHON1	WAHOO	NE	0.22E	0.22
WPRW4	WAPITI 1W	WY	0.22E	0.22
BEAN8	BEACH	ND	0.21E	0.21
BWXW4	BUFFALO BILL RES	WY	0.21E	0.21
COAR155	CENTENNIAL 6W	CO	0.21E	0.21
CBRS2	CHAMBERLAIN 5S	SD	0.21E	0.21
CHUM7	CHULA, MUDDY CR	MO	0.21E	0.21
COS	COLORADO SPRINGS	CO	0.21	0.21
BAGM8	DUPUYER 22SW	MT	0.21E	0.21

EKWN1 ELKHORN 1NW NE 0.21E 0.21
 COB087 ERIE 3SW CO 0.21E 0.21
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ID	DESCRIPTION	STATE	06/20	PERIOD SUM
FOXC2	FOXTON 2N	CO	0.21E	0.21
HLRC2	HIGHLANDS RANCH	CO	0.21E	0.21
CODG121	HIGHLANDS RANCH 3SSE	CO	0.21E	0.21
HYNN1	HYANNIS 4N	NE	0.21E	0.21
IRK	KIRKSVILLE	MO	0.21	0.21
MLSS2	MILLER 11NW	SD	0.21E	0.21
MOT	MINOT INTL AIRPORT	ND	0.21	0.21
OHKN1	OSHKOSH 8SW	NE	0.21E	0.21
PHIM8	PHILIPSBURG 2S	MT	0.21E	0.21
PTLC2	PLATTEVILLE 2NNW	CO	0.21E	0.21
PSPN1	PONCA STATE PARK	NE	0.21E	0.21
SHR	SHERIDAN AIRPORT	WY	0.21	0.21
WGSW4	SHERIDAN SCHOOL	WY	0.21E	0.21
STJN1	ST JAMES	NE	0.21E	0.21
WYNN1	WAYNE	NE	0.21E	0.21
YUMC2	YUMA	CO	0.21E	0.21
AWSW4	ADAMS RAWS	WY	0.20	0.20
ABRM8	ALBRO LAKE	MT	0.20	0.20
ALEN8	ALEXANDER 4NNW	ND	0.20E	0.20
ATCI4	ATLANTIC 5SW, E NISH	IA	0.20E	0.20
BADM8	BADGER PASS	MT	0.20	0.20
BLDW4	BALD MOUNTAIN	WY	0.20	0.20
BSCW4	BASE CAMP, MORAN 9NE	WY	0.20	0.20
BTLW4	BATTLE MOUNTAIN	WY	0.20	0.20
BSTM8	BIG SKY RESORT	MT	0.20E	0.20
BBSW4	BLIND BULL SUMMIT	WY	0.20	0.20
BRCM8	BRACKETT CREEK	MT	0.20	0.20
BUW4	BUFORD 5SE	WY	0.20E	0.20
CLVM8	CALVERT CREEK	MT	0.20	0.20
CMRM7	CAMERON 4NW	MO	0.20E	0.20
SFJM8	CHECKERBOARD 12NE	MT	0.20	0.20
CPKW4	CLOUD PEAK RESERVOIR	WY	0.20	0.20
CMDM8	CLOVER MEADOW	MT	0.20	0.20
CNEC2	COLORADO SPRINGS 4NE	CO	0.20E	0.20
CPMC2	COPPER MOUNTAIN	CO	0.20	0.20
COLR720	DRAKE 5WNW	CO	0.20E	0.20
ELRC2	ELK RIVER #2	CO	0.20	0.20
ECSN1	ERICSON 8WNW	NE	0.20	0.20
FOGC2	FORT MORGAN	CO	0.20E	0.20
FMGC2	FORT MORGAN	CO	0.20	0.20
FRON1	FORT ROBINSON	NE	0.20E	0.20
FRI	FT RILEY	KS	0.20	0.20
FRYK1	FT RILEY	KS	0.20E	0.20
FTRK1	FT RILEY, KANSAS R	KS	0.20E	0.20
GDYC2	GLENDEVEY	CO	0.20E	0.20
GRVW4	GROS VENTRE SUMMIT	WY	0.20	0.20
BRRN1	HARRISBURG 15SW RAWS	NE	0.20E	0.20
HSNS2	HARRISON 4W	SD	0.20E	0.20
HRFS2	HEREFORD 12SW	SD	0.20E	0.20

HGOC2	HUGO 1NW	CO	0.20	0.20
HUGC2	HUGO AMRAD	CO	0.20E	0.20
INCW4	INDIAN CREEK	WY	0.20	0.20
JNPC2	JONES PASS	CO	0.20	0.20

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KRWW4	KIRWIN	WY	0.20	0.20
STLC2	LEROY 9WSW	CO	0.20E	0.20
BSKM8	LONE MOUNTAIN	MT	0.20	0.20
LSVC2	LOUISVILLE 2SW	CO	0.20E	0.20
MRTM8	MARTINSDALE 3NNW	MT	0.20E	0.20
MDLI1	MEADOW LAKE	ID	0.20	0.20
MTEW4	MEETEETSE	WY	0.20E	0.20
OELS2	OELRICHS	SD	0.20E	0.20
HHDS2	OELRICHS, HORSEHEAD C	SD	0.20	0.20
PTNM8	PETERSON MEADOWS	MT	0.20	0.20
PHBW4	PHILLIPS BENCH	WY	0.20	0.20
RESC2	RABBIT EARS	CO	0.20	0.20
RABN1	RALSTON	NE	0.20E	0.20
RWCN1	RED WILLOW (BLO DAM)	NE	0.20E	0.20
ROAC2	ROACH	CO	0.20	0.20
NRPS2	ROCHFORD 7NW	SD	0.20	0.20
RLAM8	ROUNDUP 15SW	MT	0.20	0.20
SCRW4	SHELL CREEK	WY	0.20	0.20
WYSH13	SHERIDAN 11SSE	WY	0.20E	0.20
SHFM8	SHOWER FALLS	MT	0.20	0.20
SNIW4	SNIDER BASIN	WY	0.20	0.20
SFSM8	SOUTH FORK SHIELDS	MT	0.20	0.20
SCDW4	SPRING CREEK DIVIDE	WY	0.20	0.20
STAM8	STAHL PEAK	MT	0.20	0.20
STTM8	STUART MOUNTAIN	MT	0.20	0.20
SUCW4	SUCKER CREEK	WY	0.20	0.20
SLBW4	SUNLIGHT BASIN	WY	0.20E	0.20
SWAN1	SWAN LAKE	NE	0.20E	0.20
TOGW4	TOGWOTEE PASS	WY	0.20	0.20
TTNM7	TRENTON	MO	0.20	0.20
VERC2	VERNON 4SW	CO	0.20E	0.20
WALI4	WALLIN 1NW	IA	0.20E	0.20
WAPW4	WAPITI 1NE	WY	0.20E	0.20
BLCW4	WASHAKIE 19NW	WY	0.20E	0.20
WHTM8	WHITE MILL	MT	0.20	0.20
APKI4	ARNOLDS PARK	IA	0.19E	0.19
BILM8	BILLINGS, YELLOWSTONE	MT	0.19E	0.19
LMBW4	BOLES SPRING	WY	0.19E	0.19
SYBW4	BOSLER 21NE	WY	0.19E	0.19
BTWS2	BRENTWOOD COLONY	SD	0.19	0.19
BRTM8	BRITTON SPRINGS	MT	0.19E	0.19
CDYW4	BUFFALO BILL DAM	WY	0.19E	0.19
CMRN1	CAMERON 20NE	NE	0.19	0.19
CHOM7	CHILLICOTHE RAWS	MO	0.19	0.19
POCW4	CLARK 20WSW	WY	0.19E	0.19
FMOC2	FORT MORGAN	CO	0.19E	0.19
WYPT9	GLENDO 6ENE	WY	0.19E	0.19

GDOW4	GLEND0 6NE	WY	0.19E	0.19
3JC	JUNCTION CITY	KS	0.19E	0.19
MNHK1	MANHATTAN 6S	KS	0.19E	0.19
NOVM7	NOVINGER	MO	0.19E	0.19
NVZM7	NOVINGER, CHARITON R	MO	0.19	0.19
HITN1	OMAHA (HITCHCOCK PK)	NE	0.19E	0.19

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STATION	DESCRIPTION	STATE	06/20	PERIOD SUM
PHGM8	PHILIPSBURG RAW5	MT	0.19E	0.19
ZPC	PINCHER CR	AB	0.19E	0.19
RICN8	RICHARDTON, HEART R	ND	0.19E	0.19
SSKW4	RIVERSIDE, SPRING CR	WY	0.19E	0.19
RKRW4	ROCK RIVER 13NNW	WY	0.19E	0.19
WLNI4	STANTON 4N	IA	0.19E	0.19
TLRN1	TAYLOR 12NE	NE	0.19E	0.19
THRW4	THOROFARE	WY	0.19E	0.19
TWF	TWIN FALLS AIRPORT	ID	0.19E	0.19
UPLN1	UPLAND	NE	0.19E	0.19
WNSN1	WINSIDE	NE	0.19E	0.19
WTPC2	WINTER PARK	CO	0.19E	0.19
WODC2	WOODLAND PARK 8NNW	CO	0.19E	0.19
ANW	AINSWORTH	NE	0.18E	0.19
BLFN8	BELFIELD 1SW	ND	0.18E	0.19
BDLC2	BRIGGSDALE	CO	0.18E	0.19
SWNN1	CHAMBERS 18W	NE	0.18E	0.19
CHLM7	CHILLICOTHE	MO	0.18E	0.19
CCCS2	CUSTER CROSSING CAMP	SD	0.18E	0.19
MORR004	DALTON 10ENE	NE	0.18E	0.19
NRJC2	DECKERS 7S	CO	0.18E	0.19
NJRC2	DECKERS 7S RAW5	CO	0.18E	0.19
DIIC2	DILLON RESERVOIR	CO	0.18E	0.19
DNCN8	DUNN CENTER 1E	ND	0.18E	0.19
EMDK1	ELMDALE 3NE	KS	0.18E	0.19
FLMC2	FLEMING	CO	0.18E	0.19
ERFS2	FREDERICK 9W, ELM R	SD	0.18	0.19
GALS2	GALENA	SD	0.18E	0.19
GLNS2	GALENA, BEAR BUTTE C	SD	0.18E	0.19
PNWS2	HILLAND 2NW	SD	0.18E	0.19
JAC	JACKSON HOLE AIRPORT	WY	0.18E	0.19
LAVM8	LAVINA	MT	0.18E	0.19
BUSS2	LEAD 11SSW	SD	0.18E	0.19
WYNB9	MANVILLE 13SSW	WY	0.18E	0.19
MLNM7	MILAN	MO	0.18E	0.19
NWLW4	NEWCASTLE 15SW	WY	0.18E	0.19
ROCK004	NEWPORT 11S	NE	0.18E	0.19
RACS2	RAPID CITY 4NW	SD	0.18E	0.19
IRIS2	RAPID CITY 6W	SD	0.18	0.19
UNRS2	RAPID CITY WFO	SD	0.18E	0.19
UNR	RAPID CITY WFO	SD	0.18E	0.19
RCHC2	ROACH	CO	0.18E	0.19
SLVM8	SILVER LAKE	MT	0.18E	0.19
SOU	SOUTH PASS CITY 2WNW	WY	0.18E	0.19
3SE	SPENCER 1N	IA	0.18E	0.19

SPHN1	STAPLEHURST 3WNW	NE	0.18E	0.19
LMCN8	WILLISTON, LTL MUDDY	ND	0.18E	0.19
BHRM8	YELLOWTAIL DAM	MT	0.18E	0.19
BAGW4	BAGGS	WY	0.17E	0.17
WHEE001	BARTLETT 9NW	NE	0.17E	0.17
BNRS2	BOXELDER CREEK	SD	0.17	0.17
BRWM7	BROWNING, LOCUST CR	MO	0.17E	0.17
GARF005	BURWELL 20NE	NE	0.17E	0.17

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9V9	CHAMBERLAIN	SD	0.17	0.17
CHEC2	CHEESMAN DAM	CO	0.17E	0.17
CHGW4	CHUGWATER	WY	0.17E	0.17
SFAK1	CO-KS STATE LINE	KS	0.17E	0.17
COSU7	DILLON 1WNW	CO	0.17E	0.17
DGLW4	DOUGLAS 1SE	WY	0.17E	0.17
RASW4	DUBOIS 22SW	WY	0.17E	0.17
DBSI1	DUBOIS EXP STATION	ID	0.17E	0.17
DUNN1	DUNBAR 4N	NE	0.17E	0.17
EKYC2	ECKLEY 14N	CO	0.17E	0.17
ENLC2	ENGLEWOOD	CO	0.17E	0.17
FTMS2	FORT MEADE	SD	0.17E	0.17
FTMC2	FT MORGAN 3N	CO	0.17E	0.17
GRCM7	GREEN CITY 5N	MO	0.17	0.17
HBGN1	HARRISBURG 4SSW	NE	0.17	0.17
HULW4	HULETT	WY	0.17E	0.17
JUDS2	KEYSTONE, BATTLE CR	SD	0.17	0.17
LPTC2	LA PORTE	CO	0.17E	0.17
COLR254	LAPORTE	CO	0.17E	0.17
LOUN1	LOUISVILLE, PLATTE R	NE	0.17E	0.17
MRMM8	MARTINSDALE 2E	MT	0.17E	0.17
LSNN8	MINOT 3SE	ND	0.17E	0.17
GASN8	MINOT 4W	ND	0.17E	0.17
MONC2	MONUMENT	CO	0.17E	0.17
MOOW4	MOOSE	WY	0.17E	0.17
PKRS2	PARKER, WEST FORK	SD	0.17	0.17
RCTS2	RAPID CITY (AMRAD)	SD	0.17E	0.17
RCYS2	RAPID CITY, RAPID CR	SD	0.17	0.17
HAWS2	RAPID CR BELOW DITCH	SD	0.17	0.17
RDTN8	RICHARDTON ABBEY	ND	0.17E	0.17
RKRI4	ROCK RAPIDS	IA	0.17E	0.17
WKO	ROCKGLENN	SK	0.17	0.17
SENS2	SENECA	SD	0.17E	0.17
SONM8	SONNETTE 2WNW	MT	0.17E	0.17
LSSI4	SPENCER, LTL SIOUX R	IA	0.17	0.17
TGWW4	TOGWOTEE	WY	0.17E	0.17
WTRN1	WATERLOO, ELKHORN R	NE	0.17E	0.17
WTLW4	WHEATLAND 10E	WY	0.17E	0.17
WBXM8	WIBAUX 2E	MT	0.17E	0.17
PRMM8	WILD HORSE RAWS	MT	0.17E	0.17
WEFN8	WILLISTON EXP FARM	ND	0.17E	0.17
WORM7	WORTH 4W	MO	0.17E	0.17
WGHW4	WRIGHT 12E	WY	0.17E	0.17

YLWM8	YELLOW MULE RAW	MT	0.17E	0.17
AKO	AKRON 1N	CO	0.16	0.16
AKNC2	AKRON 1SE	CO	0.16E	0.16
HGRC2	BAILEY 7NW	CO	0.16E	0.16
BOI	BOISE WFO	ID	0.16E	0.16
BKTI4	BROKEN KETTLE RAW	IA	0.16E	0.16
COMR69	BRUSH	CO	0.16E	0.16
COMR6	BRUSH 2W	CO	0.16E	0.16
COLF003	CLARKSON 8SSW	NE	0.16E	0.16
DRHN8	DICKINSON RANCH HQ	ND	0.16E	0.16

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GNVS2	GANN VALLEY	SD	0.16E	0.16
GVYS2	GANN VALLEY 8SW	SD	0.16E	0.16
GRGI4	GEORGE	IA	0.16E	0.16
GLHS2	GLENHAM	SD	0.16E	0.16
MOWH1	GRANT CITY 4WSW	MO	0.16E	0.16
GRTM7	GRANT CITY 5WSW	MO	0.16	0.16
HARC2	HARTSEL, SO PLATTE	CO	0.16E	0.16
LCON1	LISCO	NE	0.16E	0.16
LLFM8	LOGAN 1E	MT	0.16	0.16
MNGN8	MANNING, KNIFE R	ND	0.16	0.16
MARS2	MARION	SD	0.16E	0.16
0853N8	MAX 8N	ND	0.16E	0.16
OMHN1	OMAHA, MISSOURI R	NE	0.16E	0.16
PLMC2	PALMER LAKE	CO	0.16E	0.16
PAKC2	PARKER 3NE	CO	0.16E	0.16
PNYM8	PONY	MT	0.16E	0.16
PRYM8	PRYOR	MT	0.16E	0.16
RWYM7	RIDGEWAY	MO	0.16	0.16
WREM8	ROSCOE, W ROSEBUD CR	MT	0.16E	0.16
UTIS2	UTICA	SD	0.16E	0.16
CHER010	VALENTINE 19SSW	NE	0.16E	0.16
COLR672	VIRGINIA DALE 7SSW	CO	0.16E	0.16
SQFM8	WISDOM 12NNE	MT	0.16E	0.16
WHEE002	BARTLETT 9NE	NE	0.15E	0.16
BGDW4	BIG GOOSE CREEK ABV	WY	0.15E	0.16
BSFM8	BILLINGS RAW	MT	0.15E	0.16
BYI	BURLEY AIRPORT	ID	0.15E	0.16
CODG25	CASTLE PINES 2NNE	CO	0.15E	0.16
CDJ	CHILLICOTHE	MO	0.15	0.16
CDAW4	CODY 25NW	WY	0.15E	0.16
CREN1	CREIGHTON	NE	0.15E	0.16
RED_013	DANBURY 1W	NE	0.15E	0.16
SODC2	DILLON CO	CO	0.15E	0.16
TOFW4	DUBOIS 41NNW	WY	0.15E	0.16
ENSM8	ENNIS	MT	0.15E	0.16
ELLS2	FREDERICK 4SW	SD	0.15E	0.16
GENC2	GENOA 1W	CO	0.15E	0.16
HMLM7	HAMILTON 2W	MO	0.15E	0.16
HLKI4	HAVELOCK	IA	0.15E	0.16
KEYC2	KEYSTONE 7ESE	CO	0.15E	0.16
LSON1	LISCO, NO PLATTE R	NE	0.15E	0.16

LOGM8	LOGAN, GALLATIN R	MT	0.15E	0.16
LBRM7	LONG BRANCH RES	MO	0.15	0.16
MWBN1	MILLARD	NE	0.15E	0.16
MNON8	MINOT EXP STATION	ND	0.15	0.16
MQM	MONIDA	MT	0.15E	0.16
NORN1	NORDEN 6S	NE	0.15E	0.16
LBF	NORTH PLATTE AIRPORT	NE	0.15	0.16
OHMN1	OMAHA	NE	0.15E	0.16
CODG42	PARKER 3NE	CO	0.15E	0.16
WICC2	RAND 7SW RAWS	CO	0.15	0.16
UPCS2	RAPID CITY 13W	SD	0.15E	0.16
ROKI4	RED OAK	IA	0.15	0.16

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RDOI4	RED OAK, NISHNABOTNA	IA	0.15E	0.16
BRNW4	RIVERTON 21NW	WY	0.15E	0.16
WCRN1	SCOTTSBLUFF 10NE	NE	0.15E	0.16
SLDW4	SOLDIER PARK SNOTEL	WY	0.15E	0.16
SPRI4	SPIRIT LAKE	IA	0.15E	0.16
WAMW4	WAMSUTTER	WY	0.15E	0.16
WTAS2	WASTA	SD	0.15E	0.16
WASS2	WASTA 3E, CHEYENNE R	SD	0.15	0.16
WSWS2	WESSINGTON SPRNG 7SW	SD	0.15E	0.16
WLTN8	WILLISTON, MISSOURI R	ND	0.15E	0.16
AKRC2	AKRON 4E	CO	0.14E	0.14
ATAW4	ALTA	WY	0.14E	0.14
ASHI1	ASHTON	ID	0.14E	0.14
ATKN1	ATKINSON 3SW	NE	0.14E	0.14
ATLI4	ATLANTIC 1NE	IA	0.14	0.14
BLNM8	BALLANTINE	MT	0.14E	0.14
WYSH5	BANNER 4E	WY	0.14E	0.14
FLDW4	BUFFALO 15W	WY	0.14E	0.14
BBRW4	BUFFALO BILL ABV	WY	0.14E	0.14
BULW4	BULL LAKE OUTFLOW	WY	0.14E	0.14
DROS2	DEADWOOD 15SSE	SD	0.14E	0.14
DKRC2	DECKERS	CO	0.14E	0.14
DTRW4	DEVILS TOWER	WY	0.14E	0.14
DOOI4	DOON 4ENE	IA	0.14E	0.14
ENWC2	ENGLEWOOD, SO PLATTE	CO	0.14E	0.14
ENNM8	ENNIS RAWS	MT	0.14E	0.14
GAKN8	GARRISON ABV SKUNK	ND	0.14E	0.14
GWDI4	GRISWOLD	IA	0.14E	0.14
COPK57	HARTSEL 12SSE	CO	0.14E	0.14
HILS2	HILL CITY 5S AMRAD	SD	0.14E	0.14
HHRW4	HYATTVILLE 6NE	WY	0.14E	0.14
JCKM5	JACKSON	MN	0.14E	0.14
MTNW4	KINNEAR 9WNW	WY	0.14E	0.14
LNGM8	LOGAN 2W	MT	0.14E	0.14
LBZM7	MACON, LTL CHARITON	MO	0.14	0.14
MCGN8	MCGREGOR	ND	0.14E	0.14
MLFK1	MILFORD DAM	KS	0.14E	0.14
MGHW4	MOSIER GULCH	WY	0.14	0.14
NBRN1	NIOBRARA 6WSW	NE	0.14E	0.14

ORLS2	ORAL	SD	0.14	0.14
HOLT009	PAGE	NE	0.14E	0.14
PTTM7	PATTONSBURG 2S	MO	0.14	0.14
PATM7	PATTONSBURG, GRAND R	MO	0.14E	0.14
RDSM8	REDSTONE	MT	0.14E	0.14
ERVW4	RIVERSIDE	WY	0.14E	0.14
RAPI4	ROCK RAPIDS, ROCK R	IA	0.14E	0.14
SPKW4	SCHOOLHOUSE PARK	WY	0.14	0.14
SOWN1	SOWDERS RANCH	NE	0.14E	0.14
SPNN1	SPRINGFIELD 7E	NE	0.14E	0.14
STRC2	STERLING	CO	0.14E	0.14
HUTM8	UTICA 11WSW	MT	0.14E	0.14
VRFN1	VALENTINE 27SSE RAWS	NE	0.14E	0.14
WAKN1	WAKEFIELD	NE	0.14E	0.14

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WSPS2	WESSINGTON SPRINGS	SD	0.14E	0.14
ISN	WILLISTON INTL APT	ND	0.14	0.14
WILM8	WILLSALL 8ENE	MT	0.14E	0.14
WTON8	WILTON	ND	0.14	0.14
ALKC2	ALLENSPARK 2NNW	CO	0.13E	0.13
ASIC2	ASPEN SPRINGS	CO	0.13E	0.13
BEYM7	BETHANY, E FK BIG CR	MO	0.13	0.13
BONW4	BONDURANT SCHOOL	WY	0.13E	0.13
BFFW4	BUFFALO 5WSW	WY	0.13E	0.13
CNSM7	CAINSVILLE	MO	0.13	0.13
CLBN1	COLUMBUS, SHELL CR	NE	0.13E	0.13
SACC2	COMMERCE CITY 1W	CO	0.13E	0.13
FORC2	FORT COLLINS (CSU)	CO	0.13E	0.13
FOXN8	FOXHOLM 7N	ND	0.13E	0.13
GLLM7	GALLATIN 1W	MO	0.13E	0.13
GAZM7	GALLATIN, GRAND R	MO	0.13E	0.13
GIBM8	GIBBONS PASS	MT	0.13E	0.13
HSMM8	HYSHAM 25SSE	MT	0.13E	0.13
JHSC2	JOHNSTOWN	CO	0.13E	0.13
LAR	LARAMIE AIRPORT	WY	0.13	0.13
LLRW4	LARAMIE, LARAMIE R	WY	0.13E	0.13
LBHM8	LITTLE BIG HORN RAWS	MT	0.13E	0.13
LYNN1	LYNCH	NE	0.13E	0.13
MLRN1	MILLARD 2NW GDDS	NE	0.13E	0.13
MIB	MINOT AFB	ND	0.13	0.13
MRAW4	MORAN 5WSW	WY	0.13E	0.13
NMOS2	NEMO 1SW	SD	0.13E	0.13
PRKS2	PARKER, WEST FORK	SD	0.13E	0.13
PJUC2	PINE JUNCTION	CO	0.13E	0.13
PRTM7	PRINCETON	MO	0.13	0.13
BIGS2	RAPID CITY, RAPID CR	SD	0.13	0.13
KEYA001	SPRINGVIEW 17WNW	NE	0.13E	0.13
COLR251	STOVE PRAIRIE 2WNW	CO	0.13E	0.13
VLVN8	VELVA	ND	0.13E	0.13
VADC2	VIRGINIA DALE 7NE	CO	0.13E	0.13
WILK1	WILSEY	KS	0.13E	0.13
WISM8	WISDOM	MT	0.13E	0.13

WORM5	WORTHINGTON	MN	0.13E	0.13
WRTW4	WRIGHT	WY	0.13E	0.13
ALSM8	ALDER 17S	MT	0.12E	0.13
AMIN8	AMIDON	ND	0.12E	0.13
AURN1	AURORA	NE	0.12E	0.13
BRTN8	BERTHOLD	ND	0.12E	0.13
BERN8	BERTHOLD 4NW	ND	0.12E	0.13
RPKW4	BIG HORN 10WSW	WY	0.12E	0.13
BVKW4	BIG HORN 4W	WY	0.12	0.13
BREC2	BRECKENRIDGE 3N	CO	0.12E	0.13
COSU40	BRECKENRIDGE 3SE	CO	0.12E	0.13
COLR675	BUCKEYE 5NNE	CO	0.12E	0.13
SPIC2	COMMERCE CITY	CO	0.12E	0.13
COSS2	CORSON, SPLIT ROCK C	SD	0.12	0.13
EGLW4	EAGLE	WY	0.12E	0.13
ELMW4	ELK MOUNTAIN	WY	0.12E	0.13

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EMLS2	ELM LAKE 4NW	SD	0.12E	0.13
FOSI4	FOSTORIA	IA	0.12E	0.13
HSII4	HASTINGS 4NE	IA	0.12E	0.13
SPLS2	HIGHMORE 18N	SD	0.12E	0.13
HOES2	HOSMER 9E	SD	0.12E	0.13
HRLC2	HOURLASS RES SNOTEL	CO	0.12E	0.13
HVNS2	HOVEN	SD	0.12E	0.13
ISMM8	ISMAY	MT	0.12E	0.13
KNMN8	KENMARE 1WSW	ND	0.12E	0.13
COB083	LAFAYETTE	CO	0.12E	0.13
LKGC2	LAKE GEORGE RAWS	CO	0.12E	0.13
LRMW4	LARAMIE 4SE	WY	0.12E	0.13
DMCW4	LARAMIE 8N	WY	0.12E	0.13
LOLS2	LEOLA 1E	SD	0.12E	0.13
COLR731	LOVELAND 4WSW	CO	0.12E	0.13
MHLN8	MARSHALL, KNIFE R	ND	0.12E	0.13
MDAN8	MEDORA, LTL MISSOURI	ND	0.12E	0.13
EEO	MEEKER AIRPORT	CO	0.12	0.13
MJTW4	MORAN 5SW	WY	0.12E	0.13
MYSM8	MYSTIC LAKE	MT	0.12E	0.13
NTWN8	NEW TOWN 4W	ND	0.12E	0.13
VAVS2	RAPID CITY 11W	SD	0.12	0.13
SPLC2	ROCKY MOUNTN ARSENAL	CO	0.12E	0.13
RRSS2	ROSCO	SD	0.12E	0.13
ROSS2	ROSCOE	SD	0.12	0.13
ROYN1	ROYAL 2SE	NE	0.12E	0.13
FSD	SIOUX FALLS	SD	0.12	0.13
FSDS2	SIOUX FALLS WFO	SD	0.12E	0.13
SPCC2	SOUTH PLATTE, NF SOP	CO	0.12E	0.13
SPES2	SPEARFISH	SD	0.12E	0.13
SBFS2	STURGIS 20NE	SD	0.12E	0.13
DODW4	WHEATLAND 28WSW	WY	0.12E	0.13
WDRC2	WOODROW 6NNE AMRAD	CO	0.12E	0.13
WRNM5	WORTHINGTON 2NNE	MN	0.12	0.13
APKC2	ALLENSPARK 1NW	CO	0.11E	0.12

ASDN1	ASHLAND #1	NE	0.11E	0.12
BLYC2	BAILEY	CO	0.11E	0.12
BLFS2	BELLE FOURCHE 9W	SD	0.11E	0.12
CYKW4	BIG HORN, CONEY CR	WY	0.11E	0.12
BRAS2	BRANDON	SD	0.11E	0.12
BRGC2	BRECKENRIDGE	CO	0.11E	0.12
BTKM8	BURNT CREEK RAW	MT	0.11E	0.12
BYRC2	BYERS 5ENE	CO	0.11E	0.12
CULN1	CULBERTSON	NE	0.11E	0.12
WYSH12	DAYTON 12WNW	WY	0.11	0.12
HLIN8	HALLIDAY	ND	0.11E	0.12
HBGI4	HAMBURG #2	IA	0.11E	0.12
HRDM8	HARDIN 3E	MT	0.11E	0.12
COPK59	HARTSEL 15SSW	CO	0.11E	0.12
RTLS2	HIGHMORE 22N	SD	0.11E	0.12
HIGS2	HIGHMORE 6SSE AMRAD	SD	0.11E	0.12
HICS2	HILL CITY	SD	0.11E	0.12
LKSC2	LARKSPUR 4NW	CO	0.11E	0.12

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LLAS2	LEOLA	SD	0.11E	0.12
LINM7	LINNEUS	MO	0.11E	0.12
LNNM7	LINNEUS 3SE	MO	0.11E	0.12
LTTW4	LITTLE WARM SPRINGS	WY	0.11E	0.12
MLKM8	MEDICINE LAKE RAW	MT	0.11E	0.12
MRDS2	MISSION RIDGE 5NW	SD	0.11E	0.12
NWCW4	NEWCASTLE	WY	0.11E	0.12
BCNW4	NEWCASTLE 5E	WY	0.11E	0.12
OMLN1	OMAHA 5W	NE	0.11E	0.12
ONKS2	ONAKA 2N	SD	0.11E	0.12
PIH	POCATELLO	ID	0.11	0.12
RNDC2	RAND	CO	0.11E	0.12
RANC2	RAND AMRAD	CO	0.11E	0.12
RIVW4	RIVERTON	WY	0.11	0.12
RVTW4	RIVERTON, LTL WIND R	WY	0.11	0.12
CHYK1	SAINT FRANCIS	KS	0.11E	0.12
SCOM8	SCOBAY 4NW	MT	0.11E	0.12
SFLS2	SIOUX FALLS 38A	SD	0.11E	0.12
FUHS2	SIOUX FALLS 7S	SD	0.11E	0.12
SPAW4	SOUTH PASS CITY	WY	0.11E	0.12
STEC2	STERLING 5NW AMRAD	CO	0.11E	0.12
STOW4	STORY	WY	0.11	0.12
WAVS2	SUX FALLS WESTERN AV	SD	0.11	0.12
TFRW4	TEN SLEEP 4NE	WY	0.11E	0.12
9V2	TRENTON DAM 8SSW	NE	0.11E	0.12
VERN1	VERDEL, PONCA CR	NE	0.11E	0.12
WLKS2	WALL LAKE	SD	0.11E	0.12
WLPS2	WALL LAKE	SD	0.11	0.12
WEEN1	WEeping WATER 3N	NE	0.11E	0.12
SMCW4	WHEATLAND 20SW	WY	0.11E	0.12
WIGC2	WIGGINS 4N	CO	0.11E	0.12
SVWM8	WILSALL 4NNE	MT	0.11E	0.12
WILS2	WILSON CREEK CAMP	SD	0.11	0.12

WRVM8	WISE RIVER 3WNW	MT	0.11E	0.12
ALVK1	ALTA VISTA	KS	0.10E	0.11
AHLN1	ASHLAND	NE	0.10E	0.11
ASHM8	ASHLAND RANGER STA	MT	0.10E	0.11
BSCM8	BASIN CREEK	MT	0.10	0.11
BLKC2	BEAR LAKE	CO	0.10	0.11
BLTM8	BEARTOOTH LAKE	MT	0.10	0.11
BLBM8	BLACK BEAR	MT	0.10	0.11
BLOM8	BLOODY DICK	MT	0.10	0.11
BWSM8	BOZEMAN 4W AGRIMET	MT	0.10E	0.11
BDGM8	BRIDGER 2N	MT	0.10	0.11
CRRM8	CARROT BASIN	MT	0.10	0.11
CBCN1	CENTER, BAZILE CR	NE	0.10E	0.11
CHLK1	CHALK	KS	0.10E	0.11
CHPN1	CHAPPELL	NE	0.10E	0.11
CPSC2	COLUMBINE PASS	CO	0.10	0.11
COPC2	COPELAND LAKE	CO	0.10	0.11
CRSN1	CRESTON	NE	0.10E	0.11
CRYM8	CRYSTAL LAKE	MT	0.10	0.11
CRAS2	CUSTER 4N	SD	0.10E	0.11

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DHLM8	DARKHORSE LAKE	MT	0.10	0.11
DDMM8	DEADMAN CREEK	MT	0.10	0.11
DDMC2	DEADMAN HILL	CO	0.10	0.11
DMLW4	DOMELAKE	WY	0.10	0.11
EGHM8	EAGLEHEAD	MT	0.10E	0.11
EKLC2	ECKLEY	CO	0.10E	0.11
ELKC2	ELK RIVER	CO	0.10	0.11
EMCM8	EMERY CR SNT	MT	0.10E	0.11
ENPW4	ENCAMPMENT	WY	0.10E	0.11
ROUC2	FAIRPLAY 20N	CO	0.10	0.11
FSHM8	FISHER CREEK	MT	0.10	0.11
COLR259	FORT COLLINS 3W	CO	0.10E	0.11
GGCC2	GOLDEN GATE	CO	0.10E	0.11
GRCW4	GRANITE CREEK	WY	0.10	0.11
GRSW4	GRASSY LAKE	WY	0.10	0.11
GRLW4	GRASSY LAKE DAM	WY	0.10E	0.11
GRCM8	GRAVE CREEK	MT	0.10	0.11
HDNM8	HARDIN	MT	0.10E	0.11
HBRM8	HEBGEN LAKE RAWS	MT	0.10E	0.11
HOOM8	HOODOO BASIN	MT	0.10	0.11
HYTW4	HOYT PEAK	WY	0.10E	0.11
IDPC2	INDEPENDENCE PASS	CO	0.10	0.11
JMEM7	JAMESON (DNR)	MO	0.10	0.11
MIHC2	JEFFERSON 10SE	CO	0.10	0.11
JWRC2	JOE WRIGHT	CO	0.10	0.11
JSDS2	JOHNSON SIDING	SD	0.10E	0.11
JUCK1	JUNCTION CITY 4SSW	KS	0.10E	0.11
ADAM010	JUNIATA 7WSW	NE	0.10E	0.11
KLNC2	KILN	CO	0.10	0.11
LGEC2	LAKE GEORGE 1NW	CO	0.10E	0.11
LMHM8	LEMHI RIDGE	MT	0.10	0.11

LNPM8	LENNEP 5SW	MT	0.10E	0.11
LTWW4	LITTLE WARM SPGS SCS	WY	0.10	0.11
LOPW4	LOOMIS PARK	WY	0.10	0.11
P69	LOWELL	ID	0.10	0.11
LYNC2	LYNX PASS	CO	0.10	0.11
MEDN1	MEAD 6S	NE	0.10E	0.11
MNPM8	MONUMENT PEAK	MT	0.10	0.11
MOKI1	MOOSE CREEK	ID	0.10	0.11
MSPM8	MOSS PEAK	MT	0.10	0.11
COCF10	NATHROP 5SSW	CO	0.10E	0.11
PHYM8	NEIHART 6S RAWS	MT	0.10E	0.11
NEVC2	NEVER SUMMER	CO	0.10	0.11
NFLW4	NEW FORK LAKE	WY	0.10	0.11
NCLW4	NEWCASTLE	WY	0.10E	0.11
NZCM8	NEZ PERCE CAMP	MT	0.10	0.11
NORM8	NORTHEAST ENTRANCE	MT	0.10	0.11
OLDW4	OLD BATTLE	WY	0.10E	0.11
CBYN1	OMAHA	NE	0.10E	0.11
ONAI4	ONAWA	IA	0.10	0.11
ONPM8	ONION PARK	MT	0.10	0.11
OVIC2	OVID	CO	0.10E	0.11
CLSW4	PAHASKA, CRECELIUS C	WY	0.10E	0.11

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PKCC2	PARK CONE	CO	0.10	0.11
PRKW4	PARKER PEAK	WY	0.10	0.11
VRPS2	PARKER, EAST FORK	SD	0.10	0.11
PICM8	PIKE CR SNT	MT	0.10	0.11
PRPM8	PORCUPINE	MT	0.10	0.11
PWDW4	POWDER RIVER PASS	WY	0.10	0.11
RKPM8	ROCKER PEAK	MT	0.10	0.11
SAJM8	SACAJAWEA	MT	0.10	0.11
SDMM8	SADDLE MOUNTAIN	MT	0.10	0.11
SGBW4	SAGE CREEK BASIN	WY	0.10	0.11
SBYM7	SALISBURY	MO	0.10	0.11
SNLW4	SAND LAKE	WY	0.10	0.11
SRSW4	SANDSTONE	WY	0.10	0.11
SBYS2	SELBY	SD	0.10E	0.11
SHCM8	SHORT CREEK	MT	0.10	0.11
WCMS2	SIOUX FALLS 6SE	SD	0.10E	0.11
SPSW4	SOUTH PASS	WY	0.10	0.11
SPRS2	SPEARFISH (AMRAD)	SD	0.10E	0.11
SFHS2	SPEARFISH CREEK	SD	0.10E	0.11
SPCN1	SPENCER, NIOBRARA R	NE	0.10E	0.11
CSPC2	SPICER	CO	0.10E	0.11
SYF	ST FRANCIS	KS	0.10E	0.11
SFCK1	ST FRANCIS	KS	0.10E	0.11
STCM8	STRINGER CREEK	MT	0.10	0.11
SULM8	SULA 3ENE	MT	0.10E	0.11
SUNS2	SUNDAY GULCH	SD	0.10	0.11
SYLW4	SYLVAN LAKE	WY	0.10	0.11
SYRW4	SYLVAN ROAD	WY	0.10	0.11
TEAS2	TEA (AMRAD)	SD	0.10E	0.11

TNDM8	TENDERFOOT RAWS	MT	0.10E	0.11
TCPW4	THERMOPOLIS 25WNW	WY	0.10E	0.11
THUW4	THUMB DIVIDE	WY	0.10	0.11
TRPW4	TRIPLE PEAKS	WY	0.10	0.11
TOPW4	TWO OCEAN PLATEAU	WY	0.10	0.11
WAKS2	WAKPALA	SD	0.10E	0.11
RAWC2	WALDEN 15ENE	CO	0.10	0.11
WAYN1	WAYNE 4NW	NE	0.10E	0.11
WBSW4	WEBBER SPRINGS	WY	0.10	0.11
WGLM8	WEST GLACIER 1N	MT	0.10	0.11
WYSM8	WEST YELLOWSTONE	MT	0.10	0.11
WYS	WEST YELLOWSTONE	MT	0.10E	0.11
MDSM8	WEST YELLOWSTONE 2E	MT	0.10E	0.11
WSKM8	WHISKEY CREEK	MT	0.10	0.11
COMR65	WIGGINS	CO	0.10E	0.11
WLLC2	WILLOW CREEK PASS	CO	0.10	0.11
WPRC2	WILLOW PARK	CO	0.10	0.11
WDBK1	WOODBINE, LYONS CR	KS	0.10E	0.11
WOWC2	WOODROW 6NNE	CO	0.10E	0.11
YNN52	YANKTON, JAMES R	SD	0.10E	0.11
WYGM8	YELLOWSTONE GATEWAY	MT	0.10E	0.11
EYPW4	YELLOWSTONE NP EAST	WY	0.10E	0.11
CRHC2	BAILEY 2NE	CO	0.09E	0.10
BZLM8	BOZEMAN 5W	MT	0.09E	0.10

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STATION			PERIOD
ID	DESCRIPTION	STATE	06/20 SUM
BZMM8	BOZEMAN 6W EXP FARM	MT	0.09E 0.10
BUKC2	BUCKEYE	CO	0.09E 0.10
BUFC2	BUFFALO PARK	CO	0.09E 0.10
BUTN1	BUTTE	NE	0.09 0.10
CLKC2	CLARK	CO	0.09E 0.10
FLGC2	FLAGLER 1S	CO	0.09E 0.10
FCS	FORT CARSON	CO	0.09 0.10
TBN	FORT LEONARD WOOD	MO	0.09 0.10
GBBI1	GIBBONSVILLE	ID	0.09E 0.10
HMBI4	HAMBURG, NISHNABOTNA	IA	0.09 0.10
HORC2	HOHNHOLZ RANCH	CO	0.09E 0.10
Houc2	HOURLASS RESERVOIR	CO	0.09E 0.10
COCC14	IDAHO SPRINGS 2WSW	CO	0.09E 0.10
KSLC2	KASSLER	CO	0.09E 0.10
KMLC2	KREMMLING 1E	CO	0.09E 0.10
LWMM8	LEWISTOWN 11ESE	MT	0.09 0.10
LMAM8	LIMA	MT	0.09E 0.10
LRRM8	LIMA RESERVOIR	MT	0.09E 0.10
LNSM7	LINNEUS, LOCUST CR	MO	0.09 0.10
MCW	MASON CITY AIRPORT	IA	0.09 0.10
PROW4	MCFADDEN 2NNE	WY	0.09E 0.10
MERC2	MERINO 7WNW	CO	0.09E 0.10
MSAM8	MISSOULA 2NE	MT	0.09E 0.10
MONN8	MONTPELIER	ND	0.09 0.10
NHTM8	NEIHART 8NNW	MT	0.09E 0.10
BNNS2	NEMO, BOXELDER CR	SD	0.09E 0.10
ONNS2	ONIDA 22NE	SD	0.09E 0.10

OLWW4	OWL CREEK	WY	0.09E	0.10
OLW4	OWL CREEK	WY	0.09E	0.10
NFKW4	PAHASKA, SHOSHONE R	WY	0.09	0.10
JHNS2	RAPID CITY 11W	SD	0.09	0.10
RENS2	RENNER	SD	0.09E	0.10
ROCS2	ROCHFORD 2WNW	SD	0.09E	0.10
ROSN1	ROSE 10WNW	NE	0.09E	0.10
ADAM006	ROSELAND 3SW	NE	0.09E	0.10
COCF8	SALIDA 6NW	CO	0.09E	0.10
SDRW4	SAND LAKE RESERVOIR	WY	0.09E	0.10
SHAC2	SHAW 4ENE	CO	0.09	0.10
BGCW4	SHERIDAN 6WSW	WY	0.09	0.10
RSIS2	SILVER CITY 1W	SD	0.09	0.10
SIOS2	SIOUX FALLS	SD	0.09E	0.10
SXFS2	SIOUX FALLS NO CLIFF	SD	0.09E	0.10
SIFS2	SIOUX FALLS,SKUNK CR	SD	0.09E	0.10
SXXW4	SUSSEX, POWDER R	WY	0.09	0.10
TGSN8	TAGUS	ND	0.09E	0.10
OCKW4	THERMOPOLIS, OWL CR	WY	0.09	0.10
TION8	TIOGA 1E	ND	0.09E	0.10
TRIM8	TRIDENT	MT	0.09E	0.10
UNIS2	UNION CENTER	SD	0.09E	0.10
VLYW4	VALLEY, SF SHOSHONE	WY	0.09E	0.10
WKPS2	WAKPALA	SD	0.09E	0.10
WTNS2	WESSINGTON 2SE	SD	0.09E	0.10
WSYM8	WEST YELLOWSTONE	MT	0.09E	0.10

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ID	DESCRIPTION	STATE	06/20	PERIOD SUM
WEY	WEST YELLOWSTONE	MT	0.09E	0.10
WEYM8	WEST YELLOWSTONE 9NW	MT	0.09E	0.10
WPTS2	WESTPORT	SD	0.09	0.10
JVWM8	WHITEHALL 7SW	MT	0.09E	0.10
WHIN1	WHITMAN 4E	NE	0.09E	0.10
0126N8	WILTON 7NE	ND	0.09E	0.10
WRSM8	WISE RIVER RAWS	MT	0.09E	0.10
WOPW4	WOODS, PIONEER CANAL	WY	0.09	0.10
WRYC2	WRAY	CO	0.09E	0.10
ADRM8	ALDER 19S	MT	0.08E	0.09
ALNN1	ALLEN	NE	0.08E	0.09
ALZM8	ALZADA 1SSE	MT	0.08E	0.09
ATWC2	ATWOOD, SO PLATTE R	CO	0.08	0.09
0134N8	BALDWIN 1W	ND	0.08E	0.09
BKRW4	BECHLER RANGER STA	WY	0.08E	0.09
COGL13	BLACK HAWK 4E	CO	0.08E	0.09
BOYN1	BOYSTOWN	NE	0.08E	0.09
BZEM8	BOZEMAN STATE UNIV	MT	0.08E	0.09
BRRM8	BRENNER RAWS	MT	0.08E	0.09
BRUM7	BRUNSWICK	MO	0.08E	0.09
BNWM7	BRUNSWICK,MISSOURI R	MO	0.08E	0.09
BNVC2	BUENA VISTA 2S	CO	0.08E	0.09
CMNM8	CAMERON	MT	0.08E	0.09
CID	CEDAR RAPIDS AIRPORT	IA	0.08	0.09
VALW4	CODY 34SW	WY	0.08E	0.09

CKCM8	COOKE CITY 2W	MT	0.08E	0.09
CORW4	CORA	WY	0.08E	0.09
DOMC2	DEAD MAN HILL	CO	0.08E	0.09
HSGS2	DEADWOOD	SD	0.08E	0.09
WBCS2	DEADWOOD 2NE	SD	0.08E	0.09
DERM8	DEER LODGE 3W	MT	0.08E	0.09
EGLC2	EAGLE 13W	CO	0.08E	0.09
EBSS2	EAGLE BUTTE,CHEYENNE	SD	0.08E	0.09
EWIN1	EWING 1N, ELKHORN R	NE	0.08E	0.09
BHCM7	EXCELLO 3WSW	MO	0.08E	0.09
FORN8	FORBES 10NW	ND	0.08E	0.09
COLR406	FORT COLLINS 4N	CO	0.08E	0.09
FFDS2	FREDERICK	SD	0.08E	0.09
COSU4	FRISCO 1N	CO	0.08E	0.09
CSFC2	GOULD 4SE	CO	0.08E	0.09
HEBN8	HEBRON	ND	0.08E	0.09
HIMS2	HIGHMORE 23N	SD	0.08E	0.09
SHIM5	HILLS	MN	0.08E	0.09
GAPM8	JUDITH GAP	MT	0.08E	0.09
JDHM8	JUDITH GAP 13E	MT	0.08E	0.09
OAEW4	LARAMIE 22SW	WY	0.08E	0.09
LWRW4	LARAMIE 2NW	WY	0.08E	0.09
LEFW4	LARAMIE 2WSW	WY	0.08E	0.09
LEIW4	LEIGH CREEK RAWLS	WY	0.08E	0.09
LWSM8	LEWISTOWN 10S	MT	0.08E	0.09
LVM	LIVINGSTON AIRPORT	MT	0.08	0.09
MAKM8	MAC KENZIE	MT	0.08E	0.09
MAHS2	MAHTO	SD	0.08E	0.09

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MHTK1	MANHATTAN	KS	0.08E	0.09
MHKK1	MANHATTAN, KANSAS R	KS	0.08E	0.09
MYLM7	MARYVILLE 1E	MO	0.08E	0.09
MYVM7	MARYVILLE, 102 RIVER	MO	0.08	0.09
MLDM8	MILDRED 5N	MT	0.08E	0.09
MOLM8	MOLT 6SW	MT	0.08E	0.09
NHRM8	NEIHART 7NW	MT	0.08E	0.09
OLFW4	OLD FAITHFUL	WY	0.08E	0.09
PACS2	PACTOLA RESERVOIR	SD	0.08E	0.09
PWDN8	PAINTED WOODS CR	ND	0.08E	0.09
PRKM8	PARK CITY 1NE	MT	0.08E	0.09
RGUS2	RENO GULCH	SD	0.08E	0.09
RHAN8	RHAME 8S	ND	0.08E	0.09
RIL	RIFLE	CO	0.08	0.09
RIW	RIVERTON AIRPORT	WY	0.08	0.09
WYCR5	ROCK RIVER 10WSW	WY	0.08E	0.09
RYTM8	RYEGATE	MT	0.08E	0.09
SAVM8	SAVAGE	MT	0.08E	0.09
RSRS2	SIOUX FALLS 5SW	SD	0.08E	0.09
STTC2	STRATTON	CO	0.08E	0.09
SOHC2	STRATTON	CO	0.08E	0.09
TULN8	TURTLE LAKE	ND	0.08E	0.09
TNBM8	TWIN BRIDGES	MT	0.08E	0.09

UNDN8	UNDERWOOD	ND	0.08E	0.09
PTNW4	UPTON 14ENE	WY	0.08E	0.09
RVNW4	UPTON 19SW	WY	0.08E	0.09
UPNW4	UPTON 19SW	WY	0.08E	0.09
VALS2	VALLEY SPRINGS	SD	0.08E	0.09
WLDC2	WALDEN	CO	0.08E	0.09
WADC2	WALDEN	CO	0.08E	0.09
WSTS2	WESTPORT 3SE	SD	0.08E	0.09
WHHM8	WHITEHALL RAWS	MT	0.08E	0.09
WHSC2	WILD HORSE 11SSE	CO	0.08E	0.09
WGTW4	WRIGHT 12W	WY	0.08E	0.09
RICS2	ABERDEEN 9NW	SD	0.07E	0.08
AFCS2	ABERDEEN, FOOT CR	SD	0.07	0.08
ASWN1	AINSWORTH	NE	0.07E	0.08
AMTM7	AMITY 4NE	MO	0.07	0.08
ANTC2	ANTERO RESERVOIR	CO	0.07	0.08
ANRC2	ANTERO RESERVOIR	CO	0.07E	0.08
ASTS2	ASTORIA 4S	SD	0.07	0.08
ATLM7	ATLANTA	MO	0.07E	0.08
COWW4	BAGGS 21NNE	WY	0.07E	0.08
MORR003	BAYARD 14NNE	NE	0.07E	0.08
WEBS009	BLADEN 4SW	NE	0.07E	0.08
BONS2	BONESTEEL	SD	0.07E	0.08
SBDW4	BOYSEN DAM	WY	0.07E	0.08
BGRM8	BOZEMAN 12NE	MT	0.07E	0.08
BRCM7	BRUNSWICK	MO	0.07	0.08
BRNM7	BRUNSWICK, GRAND R	MO	0.07E	0.08
BUFW4	BUFFALO	WY	0.07	0.08
DCCS2	CENTRAL CITY	SD	0.07	0.08
CYDM8	CLYDE PARK 1W	MT	0.07E	0.08

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COPW4	CODY	WY	0.07	0.08
NGPC2	COWDREY 6NW	CO	0.07E	0.08
DEAS2	DEADWOOD	SD	0.07E	0.08
EKIM8	EKALAKA 7SE	MT	0.07E	0.08
ENCW4	ENCAMPMENT 10ESE	WY	0.07E	0.08
FAXS2	FAIRFAX #2	SD	0.07E	0.08
FAUS2	FAULKTON 1NW	SD	0.07E	0.08
FAAS2	FAULKTON 6ESE	SD	0.07E	0.08
FFBC2	FLORISSANT	CO	0.07E	0.08
FHMN8	FOXHOLM 7N	ND	0.07E	0.08
GAAM8	GALENA RAWS	MT	0.07E	0.08
GDV	GLENDIVE	MT	0.07	0.08
GNAM8	GLENTANA 4SW	MT	0.07E	0.08
GOSN1	GROSS 1E	NE	0.07E	0.08
3HT	HARLOWTON	MT	0.07E	0.08
HLWM8	HARLOWTON 1SW	MT	0.07E	0.08
HFDS2	HARTFORD	SD	0.07E	0.08
HWPk1	HAYS	KS	0.07E	0.08
HAYK1	HAYS	KS	0.07E	0.08
HYSK1	HAYS, BIG CREEK	KS	0.07	0.08
HERM5	HERON LAKE	MN	0.07E	0.08

HEDS2	HERRIED	SD	0.07E	0.08
HUMS2	HUMBOLT	SD	0.07E	0.08
HYAN1	HYANNIS	NE	0.07E	0.08
IRES2	IRENE	SD	0.07E	0.08
JACM8	JACKSON	MT	0.07E	0.08
JELW4	JELM 2S	WY	0.07E	0.08
KONK1	KANORADO	KS	0.07E	0.08
MOFSA041	KEYTESVILLE	MO	0.07E	0.08
LKFM5	LAKEFIELD	MN	0.07	0.08
LAUN1	LAUREL	NE	0.07E	0.08
SNOM8	LEWISTOWN 20SW	MT	0.07E	0.08
LIC	LIMON	CO	0.07	0.08
LTHN8	LITCHVILLE 2NW	ND	0.07E	0.08
SLDM8	LIVINGSTON 7NE	MT	0.07E	0.08
LRVC2	LONG DRAW RES SNOTEL	CO	0.07E	0.08
MENM8	MENARD 3NE	MT	0.07E	0.08
MGZM8	MILLEGAN 14SE	MT	0.07E	0.08
NWPN1	NEWPORT	NE	0.07E	0.08
UDFC2	PARKER	CO	0.07E	0.08
SAPC2	PARKER	CO	0.07E	0.08
PAMS2	PARMELEE 7SSW	SD	0.07E	0.08
PLYK1	PLYMOUTH 1SW	KS	0.07E	0.08
PRWC2	PREWITT RESERVOIR	CO	0.07E	0.08
RPJM8	RAPELJE 4S	MT	0.07E	0.08
RYGM8	RYEGATE 18NNW	MT	0.07E	0.08
SHLW4	SHELL 1NE	WY	0.07	0.08
SSHW4	SHOSHONI	WY	0.07E	0.08
SIDM8	SIDNEY 2S	MT	0.07E	0.08
SFMS2	SUX FALLS, MAPLE ST	SD	0.07	0.08
TEPM8	TEPEE POINT RAW	MT	0.07E	0.08
VRNS2	VERMILLION	SD	0.07E	0.08
SVMS2	VERMILLION STORMNET	SD	0.07E	0.08

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STATION	DESCRIPTION	STATE	06/20	PERIOD SUM
VACM8	VIRGINIA CITY	MT	0.07E	0.08
WASN8	WASHBURN	ND	0.07E	0.08
WSBN8	WASHBURN, MISSOURI R	ND	0.07E	0.08
WEWS2	WEWELA 1N	SD	0.07	0.08
WLVW4	WOLVERINE	WY	0.07E	0.08
WORW4	WORLAND	WY	0.07E	0.08
WRL	WORLAND AIRPORT	WY	0.07	0.08
WHRW4	WORLAND, BIGHORN R	WY	0.07E	0.08
WRHW4	WRIGHT 16NW	WY	0.07E	0.08
ADRN8	ADRIAN	ND	0.06E	0.06
ADRM5	ADRIAN	MN	0.06E	0.06
LMRM8	ANTELOPE RAW	MT	0.06	0.06
ARTS2	ARTAS	SD	0.06E	0.06
ARAS2	ARTAS 1S	SD	0.06	0.06
ATAM7	ATLANTA RAW	MO	0.06	0.06
CCAS2	AVON 6SW	SD	0.06E	0.06
BSTN1	BASSETT	NE	0.06E	0.06
BMKN8	BISMARCK 5NNW	ND	0.06	0.06
BKFC2	BLACK FOREST	CO	0.06E	0.06

BOWS2	BOWDLE	SD	0.06E	0.06
BWDS2	BOWDLE	SD	0.06E	0.06
BUCM7	BUCKNER	MO	0.06E	0.06
COCF25	BUENA VISTA 4WNW	CO	0.06E	0.06
BYNM7	BYNUMVILLE 1E	MO	0.06E	0.06
CSHM8	CASHE CREEK	MT	0.06E	0.06
CCYC2	CENTRAL CITY	CO	0.06E	0.06
COD	CODY	WY	0.06	0.06
SFOW4	CODY 19SW	WY	0.06E	0.06
COOW4	CODY 5SE	WY	0.06E	0.06
COLM8	COLSTRIP	MT	0.06E	0.06
CULM8	CULBERTSON	MT	0.06E	0.06
KCRW4	ELK MNT 12ESE ROCK C	CO	0.06	0.06
ELLN8	ELLENDALÉ 1N	ND	0.06E	0.06
FALS2	FAULKTON	SD	0.06E	0.06
TBNM7	FORT LEONARD WOOD	MO	0.06E	0.06
FRES2	FREEMAN	SD	0.06E	0.06
GARS2	GARRETSON	SD	0.06E	0.06
NESN1	HASKELL AGRICULTURAL	NE	0.06E	0.06
HBDM8	HEBGEN DAM	MT	0.06E	0.06
HDKM5	HENDRICKS	MN	0.06E	0.06
HGMS2	HIGHMORE 16N	SD	0.06E	0.06
HGRM8	HILGER	MT	0.06E	0.06
TDFS2	HILL CITY, SPRING CR	SD	0.06	0.06
HOMS2	HOSMER 1E	SD	0.06E	0.06
INWI4	INWOOD	IA	0.06E	0.06
IWDI4	INWOOD	IA	0.06E	0.06
ADAM002	JUNIATA 6SSW	NE	0.06E	0.06
KLYM8	KELLY RAWS	MT	0.06E	0.06
KINW4	KINNÉAR 2SW, WIND R	WY	0.06E	0.06
KNXM7	KNOXVILLE	MO	0.06E	0.06
LEAS2	LEAD	SD	0.06E	0.06
LENS2	LENNOX 3NE	SD	0.06E	0.06
LCMM8	LEWISTOWN	MT	0.06E	0.06

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LEWM8	LEWISTOWN 2SW	MT	0.06E	0.06
LWT	LEWISTOWN AIRPORT	MT	0.06	0.06
RESN1	LISCO 22NNE	NE	0.06E	0.06
LOWS2	LOWRY	SD	0.06E	0.06
LUMV5	LUVERNE, ROCK R	MN	0.06E	0.06
MARN1	MARTINSBURG	NE	0.06E	0.06
NGTC2	NORTHGATE, N PLATTE	CO	0.06E	0.06
OFAW4	OLD FAITHFUL	WY	0.06E	0.06
OPNM8	OPHEIM 10N	MT	0.06E	0.06
OSGW4	OSAGE	WY	0.06E	0.06
RAPS2	PACTOLA DAM	SD	0.06	0.06
PKKC2	PARKER 1SE	CO	0.06E	0.06
PRKC2	PARKER 1W GDDS	CO	0.06E	0.06
PLTS2	PLATTE	SD	0.06E	0.06
PLTM7	PLATTSBURG	MO	0.06E	0.06
LPPM7	PLATTSBURG 2E	MO	0.06E	0.06
PTMN1	PLATTSMOUTH 1E	NE	0.06E	0.06

POLS2	POLLOCK	SD	0.06E	0.06
RLKC2	RED FEATHR LAKES 2SE	CO	0.06E	0.06
REGN8	REGENT, CANNONBALL R	ND	0.06E	0.06
RNOW4	RENO JUNCTION	WY	0.06E	0.06
ROBM8	ROBERTS 1N	MT	0.06E	0.06
RSDM7	ROSENDALE, 102 RIVER	MO	0.06	0.06
SELS2	SELBY	SD	0.06E	0.06
SDYM8	SIDNEY 1NE	MT	0.06E	0.06
SDY	SIDNEY-RICHLAND AP	MT	0.06	0.06
SVRM8	SILVER STAR	MT	0.06E	0.06
STNM8	STANFORD	MT	0.06E	0.06
STSC2	STRONTIA SPRINGS RES	CO	0.06E	0.06
DUSM8	SWIFT DAM	MT	0.06E	0.06
WYWH1	TEN SLEEP 5NNW	WY	0.06E	0.06
BMTW4	THERMOPOLIS 9NE	WY	0.06E	0.06
TOLS2	TOLSTOY 6N	SD	0.06E	0.06
TSTM8	TOSTON 5NW AGRIMET	MT	0.06E	0.06
TOSM8	TOSTON, MISSOURI R	MT	0.06E	0.06
TURN8	TURTLE LAKE 4N	ND	0.06E	0.06
SMHM8	WHITE SULPHUR 25NNW	MT	0.06E	0.06
BDLM8	WHITEHALL 4SW RAW	MT	0.06E	0.06
WTWS2	WHITEWOOD 1S	SD	0.06E	0.06
COCH27	WILD HORSE 1NW	CO	0.06E	0.06
BFCW4	WINCHESTER 2NE	WY	0.06E	0.06
OLF	WOLF POINT	MT	0.06	0.06
AKAS2	AKASKA 21SE	SD	0.05E	0.05
ANAM8	ANACONDA	MT	0.05E	0.05
BLZC2	BALZAC	CO	0.05E	0.05
BRBM8	BARBER	MT	0.05E	0.05
BFOS2	BELLE FOURCHE 22NNW	SD	0.05E	0.05
BPI	BIG PINEY	WY	0.05	0.05
BISN8	BISMARCK 7N	ND	0.05E	0.05
BIWN8	BISMARCK, MISSOURI R	ND	0.05E	0.05
BLUN1	BLUE HILL 4SW	NE	0.05E	0.05
BYDM8	BOYD, RED LODGE CR	MT	0.05E	0.05
BDBM8	BRANDENBERG	MT	0.05E	0.05

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ID	DESCRIPTION	STATE	06/20	PERIOD SUM
BRGS2	BRIDGEWATER	SD	0.05E	0.05
BUMC2	BUFFALO CREEK	CO	0.05E	0.05
BRRW4	BURRIS	WY	0.05E	0.05
YYC	CALGARY	AB	0.05	0.05
27D	CANBY	MN	0.05E	0.05
CARM8	CARDWELL	MT	0.05E	0.05
CLKN1	CLARKSON	NE	0.05E	0.05
CODW4	CODY	WY	0.05E	0.05
ODIW4	CODY RADIO	WY	0.05E	0.05
CLBM8	CULBERTSON 3SE	MT	0.05E	0.05
DRBM8	DARBY	MT	0.05E	0.05
DIVC2	DIVIDE AMRAD	CO	0.05E	0.05
DVDM8	DIVIDE, BIG HOLE R	MT	0.05E	0.05
SUMM8	EAST GLACIER 11SW	MT	0.05E	0.05
EKLM8	EKALAKA	MT	0.05E	0.05

EWDN1	ELKHORN 4SE	NE	0.05E	0.05
ELMS2	ELM SPRINGS 3ESE	SD	0.05E	0.05
EMSS2	ELM SPRINGS 4NW	SD	0.05E	0.05
FSTM8	FISHTAIL	MT	0.05E	0.05
FSLM8	FISHTAIL 7W RAW	MT	0.05E	0.05
0190N8	FORBES 4NE	ND	0.05E	0.05
MAPS2	FREDERICK, MAPLE R	SD	0.05E	0.05
FRSC2	FRISCO	CO	0.05E	0.05
FCKN1	FT CROOK, PAPILLION	NE	0.05E	0.05
COJF40	GOLDEN 1NW	CO	0.05E	0.05
FWFM8	GRASS RANGE 19SSE	MT	0.05E	0.05
GXY	GREELEY	CO	0.05	0.05
GLOC2	GREELEY-LOVELAND DIV	CO	0.05E	0.05
STEN1	HAIGLER, NF REPUB R	NE	0.05E	0.05
HANM8	HAND CREEK	MT	0.05E	0.05
HAFS2	HARTFORD	SD	0.05E	0.05
HBGM8	HEBGEN DAM	MT	0.05E	0.05
MDCS2	HILL CITY 8SW	SD	0.05E	0.05
HOYM8	HOYT 3SW	MT	0.05E	0.05
COCC16	IDAHO SPRINGS	CO	0.05E	0.05
IPSS2	IPSWICH	SD	0.05E	0.05
ITHN1	ITHACA, WAHOO CR	NE	0.05E	0.05
JTWN8	JAMESTOWN HOSPITAL	ND	0.05	0.05
JMSN8	JAMESTOWN, JAMES R	ND	0.05E	0.05
KEYW4	KEYHOLE RES	WY	0.05E	0.05
KIRC2	KIRK AMRAD	CO	0.05E	0.05
NOBM8	KNOBS 4SW	MT	0.05E	0.05
ANNS2	LEAD 6SW, ANNIE CR	SD	0.05	0.05
LDRI1	LEADORE	ID	0.05E	0.05
LNXS2	LENNOX	SD	0.05E	0.05
LSTI4	LESTER	IA	0.05E	0.05
LRGM8	LIVINGSTON AIRPORT	MT	0.05	0.05
LGIK1	LONG ISLAND 1N	KS	0.05E	0.05
MADM8	MADISON DAM BLO	MT	0.05E	0.05
QADW4	MAMMOTH 25WSW	WY	0.05E	0.05
MNTK1	MANHATTAN 4N	KS	0.05	0.05
MVEM8	MELVILLE 4W	MT	0.05E	0.05
MNOS2	MENNO	SD	0.05E	0.05

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MVLS2	MILESVILLE 5NE	SD	0.05E	0.05
MNDS2	MOUND CITY	SD	0.05E	0.05
MLSN1	MULLEN 15S	NE	0.05E	0.05
MSSM7	MUSSEL FORK	MO	0.05	0.05
NCVN1	NEBRASKA CITY #2	NE	0.05E	0.05
OMAN1	OMAHA STANDNG BEAR L	NE	0.05E	0.05
OPMM8	OPHEIM 12SSE	MT	0.05E	0.05
ORCN1	ORCHARD 1NW	NE	0.05E	0.05
PKS	PICKSTOWN	SD	0.05E	0.05
PKSS2	PICKSTOWN	SD	0.05	0.05
NFSC2	PINE, NF SO PLATTE R	CO	0.05E	0.05
PLTN1	PLATTSMOUTH 1E	NE	0.05E	0.05
PRIM7	PRAIRIE HILL 2WNW	MO	0.05	0.05

RONW4	RAIRDEN 2WSW	WY	0.05E	0.05
RGNN8	REGAN 6NE	ND	0.05E	0.05
RALM7	ROLLA	MO	0.05E	0.05
RRGM7	ROLLA (UNIV OF MO)	MO	0.05	0.05
ROEM7	ROLLA 1SE	MO	0.05E	0.05
SLNI1	SALMON	ID	0.05E	0.05
SEMW4	SEMINOE DAM	WY	0.05E	0.05
SETW4	SEMINOE DAM DCP	WY	0.05E	0.05
SBLW4	SODA BUTTE CREEK	WY	0.05E	0.05
SPKM7	SPICKARD 7W	MO	0.05	0.05
SPDM8	SPRINGDALE	MT	0.05E	0.05
THMW4	THERMOPOLIS	WY	0.05E	0.05
OCW4	THERMOPOLIS, OWL CR	WY	0.05E	0.05
TTNN1	TRENTON DAM	NE	0.05	0.05
VPRN1	VALPARAISO	NE	0.05E	0.05
VDGN1	VERDIGRE	NE	0.05E	0.05
WSHN8	WASHBURN, TURTLE CR	ND	0.05E	0.05
WSRM8	WHITE SULPHUR SPRNGS	MT	0.05E	0.05
WIFC2	WILLIAMS FORK DAM	CO	0.05E	0.05
WWPC2	WOODLAND PARK 3W	CO	0.05E	0.05
OTG	WORTHINGTON AIRPORT	MN	0.05	0.05
COEL2	AGATE 9SE	CO	0.04E	0.04
ALPS2	ALPENA, SAND CR	SD	0.04E	0.04
AMCK1	AMERICUS 2S	KS	0.04E	0.04
AVNS2	AVON	SD	0.04E	0.04
BSNW4	BASIN	WY	0.04E	0.04
BHBW4	BASIN, BIGHORN R	WY	0.04	0.04
BUAN8	BEULAH 2NW	ND	0.04E	0.04
BIDM8	BIDDLE	MT	0.04E	0.04
BGTM8	BIG TIMBER	MT	0.04E	0.04
BTMM8	BIG TIMBER 1E	MT	0.04E	0.04
BMFM8	BLOOMFIELD 5NNE	MT	0.04E	0.04
BOSW4	BOSLER 2S, LARAMIE R	WY	0.04E	0.04
BZN	BOZEMAN AIRPORT	MT	0.04	0.04
DSPK1	BURDICK	KS	0.04E	0.04
CPIC2	CAMPION	CO	0.04E	0.04
CNNS2	CANTON	SD	0.04E	0.04
CANS2	CANTON, BIG SIOUX R	SD	0.04E	0.04
CGI	CAPE GIRARDEAU AP	MO	0.04	0.04
CSNI4	CARSON 3NNE	IA	0.04E	0.04

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WYSH11	CLEARMONT 9WSW	WY	0.04E
CFHM7	CLIFTON HILL	MO	0.04E
OBW4	CODY 12SE	WY	0.04E
CCPM7	CONCEPTION	MO	0.04E
LSKM5	CURRIE	MN	0.04E
DINM8	DILLON 9SSE	MT	0.04E
EGYN8	EDGELEY 3WNW	ND	0.04E
ELNN8	ELLENDAL 9NW	ND	0.04E
ELCS2	ELM SPRINGS, ELK CR	SD	0.04
ERKS2	EUREKA	SD	0.04E
COLR25	FORT COLLINS 4SW	CO	0.04E

GILW4	GILLETTE 4SE	WY	0.04E	0.04
GLEI4	GLENWOOD 3SW	IA	0.04E	0.04
GCRW4	GRASS CREEK DIVIDE	WY	0.04E	0.04
HASK1	HAYS 1S	KS	0.04E	0.04
HYS	HAYS AIRPORT	KS	0.04E	0.04
HON	HURON	SD	0.04	0.04
COCC17	IDAHO SPRINGS 1ENE	CO	0.04E	0.04
KGCM7	KING CITY	MO	0.04E	0.04
KBYW4	KIRBY 1W	WY	0.04E	0.04
KRLS2	KIRLEY 6N	SD	0.04E	0.04
LNFW4	L NORTH FORK	WY	0.04E	0.04
COB08	LAFAYETTE	CO	0.04E	0.04
LKWM5	LAKE WILSON	MN	0.04E	0.04
IDOC2	LAWSON, CLEAR CREEK	CO	0.04E	0.04
LDSM8	LINDSAY	MT	0.04E	0.04
LIES2	LITTLE EAGLE, GRAND R	SD	0.04E	0.04
LVGM8	LIVINGSTON 12S	MT	0.04E	0.04
LIVM8	LIVINGSTON 5S	MT	0.04E	0.04
MAZM7	MADISON	MO	0.04E	0.04
MDNN8	MANDAN 3W, HEART R	ND	0.04E	0.04
MESN8	MANDAN EXP STATION	ND	0.04E	0.04
MML	MARSHALL AIRPORT	MN	0.04E	0.04
MTAC2	MATACAT	CO	0.04E	0.04
MTHC2	MATHESON 8SE	CO	0.04E	0.04
MNDM7	MENDON, HICKORY BR	MO	0.04E	0.04
MCCM8	MILES CITY RAWS	MT	0.04E	0.04
BGOS2	MILESVILLE 9N	SD	0.04E	0.04
MINS2	MINA (MINA LAKE)	SD	0.04E	0.04
MOCM8	MOCCASIN 2W	MT	0.04E	0.04
MCWM8	MOCCASIN 2W AGRIMET	MT	0.04E	0.04
MORM8	MOORHEAD 9NE	MT	0.04E	0.04
NEWN1	NEWCASTLE	NE	0.04E	0.04
NNNC2	NUNN	CO	0.04E	0.04
NMNC2	NUNN	CO	0.04E	0.04
NYEM8	NYE #2	MT	0.04E	0.04
FOFW4	OLD FAITHFUL	WY	0.04E	0.04
ONTS2	ORIENT	SD	0.04E	0.04
PKLC2	PICKLE GULCH RAWS	CO	0.04E	0.04
PNVS2	PLAINVIEW 6SSW	SD	0.04E	0.04
PTTC2	PLATTE SPRINGS	CO	0.04E	0.04
UIN	QUINCY	IL	0.04	0.04
RAFM8	RAYNESFORD 2NNW	MT	0.04E	0.04

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RCHM8	RICHEY 10SW	MT	0.04E 0.04
RICM7	RICHMOND, CROOKED R	MO	0.04E 0.04
RVRN1	RIVERTON, REPUBLICAN	NE	0.04E 0.04
RVTN1	RIVERTON, THOMPSON C	NE	0.04E 0.04
RLLM7	ROLLA	MO	0.04E 0.04
ROXC2	ROXBOROUGH ST PARK	CO	0.04E 0.04
RUTC2	RUSTIC 9WSW	CO	0.04E 0.04
RYEM8	RYEGATE 2E	MT	0.04E 0.04
SPPM8	SAPPINGTON HWY BR	MT	0.04E 0.04

SAWW4	SAWMILL PARK RAWS	WY	0.04	0.04
SCBM8	SCOBAY	MT	0.04E	0.04
SIAC2	SEDALIA 5SSE AMRAD	CO	0.04E	0.04
EROS2	SIOUX FALLS 14NE	SD	0.04E	0.04
SPCW4	SOUTH PASS CITY 3NNE	WY	0.04E	0.04
STFK1	ST FRANCIS 8NW	KS	0.04E	0.04
SLRS2	ST LAWRENCE	SD	0.04E	0.04
STBM7	STANBERRY	MO	0.04E	0.04
SSDC2	STRONTIA SPRINGS DAM	CO	0.04E	0.04
AXTM8	VIRGINIA CITY 15SE	MT	0.04E	0.04
NFSW4	WAPITI, NF SHOSHONE	WY	0.04E	0.04
WETS2	WETONKA 7S	SD	0.04E	0.04
WHTS2	WHITE	SD	0.04E	0.04
WHIS2	WHITEHORSE, MOREAU R	SD	0.04E	0.04
WCRM8	WICKED CREEK RAWS	MT	0.04E	0.04
WFDC2	WILLIAMS FORK DAM	CO	0.04E	0.04
WLLW4	WILLWOOD DAM	WY	0.04E	0.04
WINM8	WINIFRED	MT	0.04E	0.04
WLFM8	WOLF POINT	MT	0.04E	0.04
WDDC2	WOODLAND PARK AMRAD	CO	0.04E	0.04
YOCK1	YOCEMENTO, BIG CR	KS	0.04E	0.04
ALTS2	ALCESTER	SD	0.03E	0.04
ALYN8	ASHLEY	ND	0.03	0.04
AVCM5	AVOCA	MN	0.03E	0.04
BFRN8	BALFOUR 3SW	ND	0.03E	0.04
BAYM8	BAYLOR	MT	0.03E	0.04
BELN1	BELLVUE	NE	0.03E	0.04
HCKN8	BISMARCK, HAY CREEK	ND	0.03E	0.04
BPKS2	BLIND PARK #2	SD	0.03E	0.04
BOYW4	BOYSEN RESERVOIR	WY	0.03E	0.04
UBLC2	BRECKENRIDGE 7SSW	CO	0.03E	0.04
BRDM8	BREDETTE	MT	0.03E	0.04
BNFM8	BRENNER GDDS	MT	0.03E	0.04
BUBC2	BUFFALO CREEK	CO	0.03E	0.04
BYG	BUFFALO(COUNTY ARPT)	WY	0.03	0.04
DINW4	BURRIS, DINWOODY CR	WY	0.03E	0.04
CNTS2	CANTON (AMRAD)	SD	0.03E	0.04
CODG126	CASTLE ROCK	CO	0.03E	0.04
0581N8	CENTER 1E	ND	0.03E	0.04
CETS2	CENTERVILLE 4N	SD	0.03E	0.04
CHYS2	CHERRY CREEK GDDS	SD	0.03E	0.04
CLKM8	CLARK CANYON DAM	MT	0.03E	0.04
CMBS2	COLUMBIA 1S, JAMES R	SD	0.03E	0.04
CLBS2	COLUMBIA 1W	SD	0.03E	0.04

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CRDW4	CRANDALL CREEK	WY	0.03E 0.04
DVSS2	DAVIS, VERMILLION R	SD	0.03E 0.04
DEVW4	DEAVER	WY	0.03E 0.04
DCRC2	DEER CREEK CANYON	CO	0.03E 0.04
DELS2	DELL RAPIDS	SD	0.03E 0.04
DLN	DILLON AIRPORT	MT	0.03 0.04
BEVW4	ENCAMPMENT, BEAVER C	WY	0.03E 0.04

ELMM8	ENNIS LAKE	MT	0.03E	0.04
LLKS2	EUREKA 13NE RAWS	SD	0.03E	0.04
EWSN1	EWING, S ELKHORN	NE	0.03E	0.04
FRPC2	FAIRPLAY 1SE	CO	0.03E	0.04
FKNN1	FRANKLIN, CENTER CR	NE	0.03E	0.04
FTLM8	FT LOGAN GDDS	MT	0.03E	0.04
GARN1	GARLAND	NE	0.03E	0.04
GCC	GILLETTE	WY	0.03	0.04
GETW4	GILLETTE 10N	WY	0.03E	0.04
GTTW4	GILLETTE 12S	WY	0.03E	0.04
GPI	GLACIER PARK AIRPORT	MT	0.03	0.04
GRMM7	GRAHAM	MO	0.03E	0.04
GRZM7	GRAHAM, NODAWAY R	MO	0.03E	0.04
WAWC2	GRANBY 4NNW	CO	0.03E	0.04
GSSM8	GRASS RANGE	MT	0.03E	0.04
COWE137	GREELEY 2N	CO	0.03E	0.04
HGSC2	HAGERMAN TUNNEL	CO	0.03E	0.04
HGEN8	HAGUE	ND	0.03E	0.04
0592N8	HANNOVER 3E	ND	0.03E	0.04
HRVK1	HARVEYVILLE	KS	0.03E	0.04
ZEGK1	HAYS	KS	0.03E	0.04
ZEMK1	HAYS 9WSW	KS	0.03E	0.04
HZNN8	HAZEN 1S, KNIFE R	ND	0.03E	0.04
HMTW4	HEART MOUNTAIN	WY	0.03E	0.04
HRNS2	HURON	SD	0.03E	0.04
JUBC2	JULESBURG CHANNEL #1	CO	0.03E	0.04
JULC2	JULESBURG, CHAN #2	CO	0.03E	0.04
LBNM5	LAKE BENTON	MN	0.03E	0.04
RBYM8	LAURIN 2SW	MT	0.03E	0.04
HCMC2	LEADVILLE 8SW	CO	0.03E	0.04
LNCK1	LINCOLNVILLE	KS	0.03E	0.04
LSNM8	LITTLE SNOWY RAWS	MT	0.03E	0.04
LOVW4	LOVELL	WY	0.03E	0.04
MADM7	MADISON	MO	0.03E	0.04
MOME1	MADISON	MO	0.03E	0.04
MRON8	MARION	ND	0.03E	0.04
MARN8	MARION 3S	ND	0.03E	0.04
MKLN1	MASKELL, MISSOURI R	NE	0.03E	0.04
MLKN8	MCCLUSKY	ND	0.03E	0.04
BOUM8	MONTANA DEV CENTER	MT	0.03E	0.04
YMJ	MOOSE JAW	SK	0.03E	0.04
MHN	MULLEN	NE	0.03E	0.04
MLNN1	MULLEN	NE	0.03E	0.04
OAKI4	OAKLAND	IA	0.03	0.04
OMCN1	OMAHA 6NW	NE	0.03E	0.04
OCDN1	ORCHARD 9NNE	NE	0.03E	0.04

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OTON1	OTOE	NE	0.03E 0.04
PCFI4	PACIFIC JUNCTION	IA	0.03E 0.04
PIPM5	PIPESTONE	MN	0.03 0.04
PLNS2	PLAINVIEW,CHEYENNE R	SD	0.03E 0.04
RBUM7	PLATO, ROUBIDOUX CR	MO	0.03E 0.04

COEL49	RAMAH 4WNW	CO	0.03E	0.04
COLR228	RED FEATHER LAKES	CO	0.03E	0.04
ROLM7	ROLLA 3NW	MO	0.03E	0.04
ALRM8	RUBY DAM	MT	0.03E	0.04
SAVM7	SAVANNAH 1S	MO	0.03E	0.04
SELM8	SEELEY LAKE	MT	0.03E	0.04
SKDM7	SKIDMORE	MO	0.03E	0.04
SBYM8	SODA BUTTE RAW	MT	0.03	0.04
SPTC2	SOUTH PLATTE GDDS	CO	0.03E	0.04
STMM7	ST JAMES	MO	0.03E	0.04
SBTC2	STEAMBOAT SPRINGS	CO	0.03	0.04
SYCN1	SYRACUSE	NE	0.03	0.04
TAKM7	TARKIO #2	MO	0.03	0.04
TARM7	TARKIO 1SW	MO	0.03E	0.04
Y68	TRACY	MN	0.03E	0.04
TYLM5	TYLER	MN	0.03E	0.04
0423N8	VENTURA 4NW	ND	0.03E	0.04
WLDW4	WHEATLAND 4N	WY	0.03E	0.04
WIGN8	WING	ND	0.03E	0.04
YLAW4	YELLOWSTONE(MAMMOTH)	WY	0.03E	0.04
ZRTM8	ZORTMAN	MT	0.03E	0.04
ALDM8	ZORTMAN MINE RAW	MT	0.03	0.04
KSDS2	ABERDEEN 3SW	SD	0.02E	0.02
SALS2	ALCESTER	SD	0.02E	0.02
ALCS2	ALCESTER	SD	0.02E	0.02
ARMM8	ARMELLS CREEK RAW	MT	0.02	0.02
ARMS2	ARMOUR	SD	0.02E	0.02
HTOS2	ASHTON 5E	SD	0.02E	0.02
BAWC2	BAILEY 7ESE	CO	0.02E	0.02
BTWM8	BELLTOWER	MT	0.02E	0.02
BEUN8	BEULAH 1W	ND	0.02E	0.02
BEGM7	BLUE SPRINGS	MO	0.02E	0.02
BOCM7	BOLCKOW, 102 RIVER	MO	0.02	0.02
BOWN8	BOWMAN	ND	0.02E	0.02
BOMN8	BOWMAN 3W	ND	0.02	0.02
BRWK1	BREWSTER 4W	KS	0.02	0.02
BRIM8	BRIDGER 5SE	MT	0.02E	0.02
SBFM8	BRIDGER 9SE	MT	0.02	0.02
LCFM8	BROCKWAY 18S	MT	0.02	0.02
0787N8	BUCHANAN 2S	ND	0.02E	0.02
ROKW4	BUFFALO 12NW, ROCK C	WY	0.02	0.02
BRLC2	BURLINGTON	CO	0.02E	0.02
BTEN8	BUTTE 5SE	ND	0.02E	0.02
BTTM8	BUTTE 8S	MT	0.02E	0.02
CRLM7	CARROLLTON	MO	0.02	0.02
CENS2	CENTERVILLE 6SE	SD	0.02E	0.02
CHPK1	CHAPMAN, CHAPMAN CR	KS	0.02E	0.02
CHLS2	CHELSEA	SD	0.02E	0.02

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CYTS2	CLAYTON, WOLF CR	SD	0.02E 0.02
CLRW4	CLEARMONT 5SW	WY	0.02E 0.02
CLNM7	CLINTON	MO	0.02 0.02

CORM8	CORWIN SPRINGS	MT	0.02E	0.02
COUN8	COURTENAY 1NW	ND	0.02E	0.02
DLMM8	DELMOE RAWS	MT	0.02E	0.02
DLLM8	DILLON (UM WESTERN)	MT	0.02E	0.02
DIXM7	DIXON 9SE	MO	0.02E	0.02
DOSS2	DOLAND	SD	0.02E	0.02
EGLM8	EAST GLACIER	MT	0.02E	0.02
ESTC2	EASTONVILLE 2NNW	CO	0.02E	0.02
ECHW4	ECHETA 2NW	WY	0.02E	0.02
EDSM7	ELDORADO SPRINGS	MO	0.02	0.02
ELKS2	ELK POINT 13NE	SD	0.02E	0.02
SEKS2	ELKTON	SD	0.02E	0.02
FRXM7	FAIRFAX	MO	0.02E	0.02
FFXM7	FAIRFAX 1W, TARKIO R	MO	0.02E	0.02
COPK15	FAIRPLAY 3WNW	CO	0.02E	0.02
FSTK1	FOSTORIA 7NW	KS	0.02E	0.02
FTRN8	FT RANSOM 4NNE	ND	0.02E	0.02
GPKM8	GATE PARK RAWS	MT	0.02E	0.02
BRAM8	GEYSER 7NE RAWS	MT	0.02E	0.02
GBNM8	GIBSON 2NE	MT	0.02E	0.02
GBSM8	GIBSON 4SW	MT	0.02E	0.02
GLTW4	GILLETTE	WY	0.02E	0.02
GLEM8	GLEN 2E	MT	0.02E	0.02
GLNI4	GLENWOOD	IA	0.02	0.02
GDVN8	GOLDEN VALLEY 10S	ND	0.02E	0.02
GLKC2	GRAND LAKE 1NW	CO	0.02E	0.02
GDLC2	GRAND LAKE 6SSW	CO	0.02E	0.02
GRNM8	GRANT 5SE	MT	0.02E	0.02
GSRM8	GRASS RANGE 13NE	MT	0.02E	0.02
MOPS2	GREEN RIDGE	MO	0.02E	0.02
GEEM7	GREEN RIDGE 3SW	MO	0.02	0.02
HA1N1	HAIGLER, ARIKAREE R	NE	0.02E	0.02
HRDM5	HARDWICK	MN	0.02E	0.02
HWKM5	HARDWICK 2NW	MN	0.02E	0.02
UMHM8	HARLOWTON 5W	MT	0.02E	0.02
HSTN1	HASTINGS 4N	NE	0.02E	0.02
GID	HASTINGS 4N	NE	0.02E	0.02
HAWI4	HAWARDEN,BIG SIOUX R	IA	0.02E	0.02
HAZN8	HAZEN 2W	ND	0.02E	0.02
HENN1	HENRY, NO PLATTE R	NE	0.02E	0.02
HOBM8	HOBSON	MT	0.02E	0.02
IRVN1	IRVINGTON	NE	0.02E	0.02
JMS	JAMESTOWN AIRPORT	ND	0.02	0.02
JRMM7	JEROME, GASCONADE R	MO	0.02E	0.02
JNSC2	JONES HILL RAWS	CO	0.02	0.02
JLBC2	JULESBURG	CO	0.02E	0.02
JBGC2	JULESBURG RETURN	CO	0.02	0.02
KRYM7	KEARNEY 2E	MO	0.02E	0.02
KRNM7	KEARNEY 3E	MO	0.02	0.02
KNNM5	KENNETH 3NE	MN	0.02E	0.02

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LFAC2	LAFAYETTE	CO	0.02E	0.02

LMRW4	LAMAR RANGER STATION	WY	0.02E	0.02
MCDM8	LANDUSKY 16SE RAWS	MT	0.02E	0.02
LDKM8	LANDUSKY 20S	MT	0.02E	0.02
LDVC2	LEADVILLE (AMRAD)	CO	0.02E	0.02
LXV	LEADVILLE 2SW	CO	0.02	0.02
LXVC2	LEADVILLE 2SW	CO	0.02E	0.02
0429N8	LEHR 4S	ND	0.02E	0.02
LNBM8	LINDBERGH LAKE	MT	0.02E	0.02
COLR676	LOVELAND 2NW	CO	0.02E	0.02
LYNS2	LYONS 5SSW	SD	0.02E	0.02
MDLM8	MCLEOD	MT	0.02E	0.02
MEDN8	MEDINA	ND	0.02E	0.02
MLRM8	MELROSE 7S	MT	0.02E	0.02
MNKN8	MENOKEN 2WNW	ND	0.02E	0.02
WIXM7	MOBERLY (KWIX RADIO)	MO	0.02	0.02
MOFSA175	MOBERLY 3N	MO	0.02E	0.02
MTVS2	MT VERNON, FIRESTEEL	SD	0.02	0.02
WHLW4	N PLATTE BLO WHALEN	WY	0.02E	0.02
TCKW4	NORRIS JUNCTION 1NW	WY	0.02E	0.02
OFF	OFFUTT FIELD	NE	0.02	0.02
OMBN1	OMAHA 8W	NE	0.02E	0.02
OHAN1	OMAHA, BIG PAPILLION	NE	0.02E	0.02
ORDS2	ORDWAY 1S, ELM R	SD	0.02E	0.02
PCFM7	PACIFIC	MO	0.02	0.02
PACM7	PACIFIC 1NNW	MO	0.02E	0.02
PVLW4	PAVILLION	WY	0.02E	0.02
PERK1	PFEIFER	KS	0.02E	0.02
PFRK1	PFEIFER, SMOKY HILL	KS	0.02E	0.02
JAMN8	PIPESTEM RES	ND	0.02	0.02
RAUN8	RAUB 5NNE	ND	0.02E	0.02
RDFS2	REDFIELD	SD	0.02E	0.02
3DE	REDFIELD	SD	0.02E	0.02
RFDS2	REDFIELD, JAMES R	SD	0.02	0.02
RBBM7	ROBY 3SE	MO	0.02E	0.02
RUPM8	ROUNDUP, MUSSELSHELL	MT	0.02E	0.02
OSCM8	ROY 2SE RAWS	MT	0.02E	0.02
ROYM8	ROY 8NE	MT	0.02E	0.02
BSHW4	RYAN PARK, BRUSH CR	WY	0.02E	0.02
LVSS2	SALEM 5NE	SD	0.02	0.02
SLMS2	SALEM 5NE	SD	0.02E	0.02
SCNK1	SCHOENCHEN 1W	KS	0.02E	0.02
SCSK1	SCHOENCHEN 2E	KS	0.02E	0.02
ZECK1	SCHOENCHEN 6WNW	KS	0.02E	0.02
SEDC2	SEDALIA 4SSE	CO	0.02E	0.02
SEBC2	SEIBERT	CO	0.02E	0.02
SIMC2	SIMLA	CO	0.02E	0.02
COEL25	SIMLA	CO	0.02E	0.02
SFKW4	SOUTH FORK	WY	0.02E	0.02
0517N8	ST ANTHONY 7NE	ND	0.02E	0.02
SJAM7	ST JAMES 4NE	MO	0.02E	0.02
TABM8	TABLE MOUNTAIN	MT	0.02E	0.02
TERM8	TERRY 1E	MT	0.02E	0.02

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TYNM8	TERRY 21NNW	MT	0.02E	0.02
TFAW4	TOWER FALLS STATION	WY	0.02E	0.02
MTTK1	TUTTLE CREEK DAM	KS	0.02	0.02
HRSS2	VALE 3NE, HORSE CR	SD	0.02E	0.02
VALM8	VALENTINE	MT	0.02E	0.02
VALN8	VALLEY CITY 3NNW	ND	0.02E	0.02
VEDN1	VERDIGRE,VERDIGRE CR	NE	0.02E	0.02
ZEJK1	VICTORIA	KS	0.02E	0.02
WAGS2	WAGNER	SD	0.02E	0.02
WKAS2	WAKONDA, VERMILLION	SD	0.02E	0.02
WLLK1	WALLACE	KS	0.02	0.02
RBXM7	WAYNESVILLE 1W	MO	0.02	0.02
WAYM7	WAYNESVILLE 5W	MO	0.02E	0.02
WEPN1	WEeping WATER	NE	0.02E	0.02
COLR189	WELLINGTON 2SW	CO	0.02E	0.02
WPCC2	WEST PLUM CREEK	CO	0.02E	0.02
WHNC2	WILD HORSE 6N	CO	0.02E	0.02
YLWW4	YELLOWSTONE(MAMMOTH)	WY	0.02E	0.02
ZIRC2	ZIRKEL	CO	0.02E	0.02
DYIM8	ZORTMAN 10SW	MT	0.02E	0.02
SUES2	ABERDEEN 2S	SD	0.01E	0.01
AGAC2	AGATE	CO	0.01E	0.01
COEL29	AGATE 4NW	CO	0.01E	0.01
ABAM7	ALBANY, E FK GRAND R	MO	0.01	0.01
ALXN1	ALEXANDRIA 3S	NE	0.01E	0.01
AXDN1	ALEXANDRIA,BIG SANDY	NE	0.01	0.01
MSQC2	ALMA 1S	CO	0.01E	0.01
APLMB	APLEY, TED	MO	0.01E	0.01
ARWN8	ARROWWOOD LAKE	ND	0.01E	0.01
ASHS2	ASHTON 2SW	SD	0.01E	0.01
ATNS2	ASHTON, JAMES R	SD	0.01	0.01
ATHS2	ATHOL, SF SNAKE CR	SD	0.01E	0.01
NFSM8	AUGUSTA 25NW	MT	0.01E	0.01
AUSM8	AUSTIN 1W	MT	0.01E	0.01
BABM8	BABB 4SW	MT	0.01E	0.01
BTHS2	BATH 1NE	SD	0.01E	0.01
0545N8	BATTLEVIEW 5SW	ND	0.01E	0.01
BLIN8	BERLIN	ND	0.01E	0.01
BDCK1	BIRD CITY 10S	KS	0.01E	0.01
BIS	BISMARCK AIRPORT	ND	0.01	0.01
BLNK1	BLAINE	KS	0.01E	0.01
BWNN8	BOWMAN HALEY RES	ND	0.01E	0.01
BRDN1	BRADSHAW	NE	0.01	0.01
BLDS2	BROADLAND 5NE	SD	0.01E	0.01
BKNM8	BROCKTON 20S	MT	0.01E	0.01
BKYM8	BROCKWAY 3WSW	MT	0.01E	0.01
BKX	BROOKINGS	SD	0.01E	0.01
BROS2	BROOKINGS 2NE	SD	0.01E	0.01
BRON1	BROWNVILLE	NE	0.01E	0.01
BTM	BUTTE FAA AIRPORT	MT	0.01	0.01
CAHM7	CALHOUN	MO	0.01E	0.01
CPRS2	CARPENTER 4NNE	SD	0.01E	0.01
CENW4	CENTENNIAL 1NE	WY	0.01E	0.01

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CETN8	CENTER 4SE	ND	0.01E	0.01
CTAM7	CENTRALIA	MO	0.01E	0.01
CINW4	CINNABAR PARK	WY	0.01E	0.01
CIRM8	CIRCLE	MT	0.01E	0.01
CLFM7	CLIFTON CITY	MO	0.01E	0.01
COYW4	CODY 21SW	WY	0.01E	0.01
COSM8	COLUMBUS	MT	0.01E	0.01
CNDS2	CONDE	SD	0.01E	0.01
BCCQ8	CONSUL 1SSW	SK	0.01E	0.01
COKN1	COOK	NE	0.01E	0.01
CORM7	CORNING	MO	0.01E	0.01
WBRM8	CORVALLIS 2NE	MT	0.01E	0.01
COTM7	COTTLEVILLE	MO	0.01E	0.01
COUW4	COULTER CREEK	WY	0.01E	0.01
CRKS2	CROOKS	SD	0.01E	0.01
ACHC2	DECKERS, SO PLATTE R	CO	0.01E	0.01
DPCM8	DEEP CREEK PASS	MT	0.01E	0.01
DFDS2	DEERFIELD 3SE	SD	0.01E	0.01
DRFS2	DEERFIELD RESERVOIR	SD	0.01E	0.01
DELM8	DEL BONITA	MT	0.01E	0.01
DENM8	DENTON 1NNE	MT	0.01E	0.01
DBYM8	DERBY MOUNTAIN RAWS	MT	0.01E	0.01
DLLC2	DILLON 1E	CO	0.01E	0.01
DOLS2	DOLAND	SD	0.01E	0.01
DKEN8	DRAKE 8NE	ND	0.01E	0.01
OTOE008	EAGLE 4S	NE	0.01E	0.01
EDGN8	EDGELEY 3W	ND	0.01E	0.01
EGTM7	EDGERTON	MO	0.01E	0.01
EDMN8	EDMUNDS ARROWWOOD	ND	0.01E	0.01
EGNS2	EGAN	SD	0.01E	0.01
EDDM7	ELDRIDGE 3E	MO	0.01E	0.01
WHSM8	ELK PEAK SNOTEL	MT	0.01E	0.01
ZEHK1	ELLIS 8S	KS	0.01E	0.01
EMBW4	EMBLEM	WY	0.01E	0.01
FAIS2	FAITH	SD	0.01E	0.01
D07	FAITH AIRPORT	SD	0.01	0.01
FLAS2	FLANDREAU	SD	0.01E	0.01
FWMW8	FORKS 4NNE	MT	0.01E	0.01
ASNM8	FORT ASSINNIBOINE	MT	0.01E	0.01
COWE132	FORT COLLINS 8ENE	CO	0.01E	0.01
LGNM8	FORT LOGAN 4ESE	MT	0.01E	0.01
FPKM8	FORT PECK DAM	MT	0.01E	0.01
FPKS2	FRANKFORT	SD	0.01E	0.01
CODG30	FRANKTOWN 4NE	CO	0.01E	0.01
FRKC2	FRANKTOWN, CHERRY CR	CO	0.01E	0.01
0391N8	FREDONIA 1E	ND	0.01E	0.01
FCRM8	FRENCH CREEK RAWS	MT	0.01E	0.01
HAVM8	FRESNO DAM	MT	0.01E	0.01
MOTX9	FT LEONARD WOOD 10S	MO	0.01E	0.01
0388N8	GACKLE 11S	ND	0.01E	0.01
KIMW4	GILLETTE	WY	0.01E	0.01
GLLW4	GILLETTE	WY	0.01E	0.01
GEEW4	GILLETTE 11E	WY	0.01E	0.01

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STATION				PERIOD
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GTEW4	GILLETTE 8E	WY	0.01E	0.01
0371N8	GRAND RAPIDS 3SW	ND	0.01E	0.01
GNTM8	GRANT	MT	0.01E	0.01
GXYC2	GREELEY	CO	0.01E	0.01
GRLC2	GREELEY 2S (UNC)	CO	0.01E	0.01
GLYC2	GREELEY 3E	CO	0.01E	0.01
GFDM7	GREENFIELD 4SE	MO	0.01E	0.01
GFZM7	GREENFIELD GDDS	MO	0.01	0.01
GREC2	GREENLAND 6NE	CO	0.01E	0.01
GBLW4	GREYBULL	WY	0.01E	0.01
GYBW4	GREYBULL, BIGHORN R	WY	0.01E	0.01
HFDN8	HANNAFORD	ND	0.01E	0.01
HTFS2	HARTFORD, SKUNK CR	SD	0.01E	0.01
HRVM8	HAVRE #2	MT	0.01E	0.01
HVR	HAVRE AIRPORT	MT	0.01	0.01
HZLM7	HAZELGREEN 1W	MO	0.01	0.01
HZTN8	HAZELTON 4NW	ND	0.01E	0.01
HAZW4	HAZLETON, POWDER R	WY	0.01	0.01
HGBM7	HIGBEE 4S	MO	0.01E	0.01
INSM8	HINSDALE 2E	MT	0.01E	0.01
HINM8	HINSDALE 4SW	MT	0.01E	0.01
HCKS2	HITCHCOCK	SD	0.01E	0.01
HLTM7	HOLT 3E	MO	0.01E	0.01
HNZM7	HUNTSVILLE, CHARITON	MO	0.01	0.01
HDFN8	HURDSFIELD 8SW	ND	0.01E	0.01
HORS2	HURON	SD	0.01E	0.01
HRHS2	HURON (AMRAD)	SD	0.01E	0.01
IRQS2	IROQUOIS	SD	0.01E	0.01
LEEM7	JAMES A REED WLR	MO	0.01E	0.01
JRNM8	JORDAN 43ENE	MT	0.01E	0.01
JUDN8	JUDSON 9SSE, HEART R	ND	0.01E	0.01
KTHN8	KATHRYN	ND	0.01E	0.01
COEL9	KIOWA 14ENE	CO	0.01E	0.01
BAFM8	LAME DEER 6ENE	MT	0.01	0.01
LOAM7	LEBANON 9E	MO	0.01E	0.01
LSSM7	LEES SUMMIT 2SE	MO	0.01	0.01
LEOS2	LEOLA SDSU	SD	0.01E	0.01
YQL	LETHBRIDGE	AB	0.01E	0.01
LBEM7	LIBERTY 3NW	MO	0.01E	0.01
LIKM7	LICKING 7W	MO	0.01E	0.01
ZUFK1	LIEBENTHAL	KS	0.01E	0.01
LLNN1	LINCOLN FIRE STA 5	NE	0.01E	0.01
LVNN1	LINCOLN, STEVENS CR	NE	0.01	0.01
LNTN8	LINTON	ND	0.01E	0.01
LINN8	LINTON 4N	ND	0.01	0.01
LTNN8	LINTON 5NW	ND	0.01E	0.01
BVRN8	LINTON, BEAVER CR	ND	0.01E	0.01
LTTK1	LORETTA	KS	0.01E	0.01
COLR110	LOVELAND 2NW	CO	0.01E	0.01
MTAM8	MALTA 35S	MT	0.01E	0.01
MANN8	MANDAN, MISSOURI R	ND	0.01E	0.01

MSGC2 MANITOU SPRINGS CO 0.01E 0.01
 RPAC2 MANITOU SPRINGS 9NW CO 0.01E 0.01
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- 03/20/07) USER=MBRFC

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	MNLN1	MANLEY	NE	0.01E	0.01
	MCLM8	MC LEOD 12SSW	MT	0.01E	0.01
	MELS2	MELLETTTE 4W	SD	0.01E	0.01
	MLTS2	MELLETTTE 7NE	SD	0.01E	0.01
	MDDM7	MIDDLETOWN	MO	0.01E	0.01
	MRRS2	MILLER	SD	0.01E	0.01
	MIRS2	MILLER 1NW	SD	0.01E	0.01
	MLNS2	MILLTOWN, JAMES R	SD	0.01E	0.01
	MSO	MISSOULA SITE 1	MT	0.01	0.01
	MGCN1	MITCHELL GERING CAN	NE	0.01	0.01
	MONS2	MONTROSE	SD	0.01E	0.01
	MTRS2	MONTROSE 8N	SD	0.01E	0.01
	CBUM8	MOSBY 39NNW	MT	0.01	0.01
	MTNM8	MOULTON RESERVOIR	MT	0.01E	0.01
	SQUM7	MOUND CITY, SQUAW CR	MO	0.01E	0.01
	CBAS2	MUD LAKE OUTLET	SD	0.01E	0.01
	NASM8	NASHUA #2	MT	0.01E	0.01
	NSHM8	NASHUA, MILK R	MT	0.01E	0.01
	FPM8	NASHUA, MISSOURI R	MT	0.01E	0.01
	ECS	NEWCASTLE 5NW	WY	0.01E	0.01
	NION1	NIOBRARA	NE	0.01E	0.01
	OPAK1	O P #1500 (OLATHE)	KS	0.01E	0.01
	OJC	OLATHE	KS	0.01	0.01
	KSJO11	OLATHE 4SE	KS	0.01E	0.01
	OAHN1	OMAHA 9NW	NE	0.01	0.01
	ONGK1	ONAGA 12 SSW	KS	0.01E	0.01
	ORHM8	OPHEIM 21NW, ROCK CR	MT	0.01E	0.01
	ORGM7	OREGON	MO	0.01E	0.01
	VVV	ORTONVILLE	MN	0.01E	0.01
	OTTM7	OTTERVILLE, LAMINE R	MO	0.01	0.01
	OTOE004	PALMYRA 2S	NE	0.01E	0.01
	OTOE002	PALMYRA 7SSE	NE	0.01E	0.01
	PARS2	PARKSTON 8ENE	SD	0.01E	0.01
	PLZN8	PLAZA 10S	ND	0.01	0.01
	PLSM8	POLARIS 4N	MT	0.01E	0.01
	PMPM8	POMPEYS PILLAR 18N	MT	0.01E	0.01
	POGM8	PORT OF MORGAN	MT	0.01E	0.01
	PFSW4	POWELL FIELD STATION	WY	0.01E	0.01
	POWW4	POWELL RADIO	WY	0.01E	0.01
	REFC2	RED FEATHER LAKES	CO	0.01E	0.01
	OWLS2	RED OWL	SD	0.01E	0.01
	RESS2	REE HEIGHTS, WOLF CR	SD	0.01E	0.01
	RXE	REXBURG AIRPORT	ID	0.01	0.01
	ROBM7	ROBY	MO	0.01E	0.01
	RKSM8	ROCK SPRINGS	MT	0.01E	0.01
	MOFSA007	RUSH HILL 3S	MO	0.01E	0.01
	RUXC2	RUXTON PARK	CO	0.01E	0.01
	SAOM8	SACO 1NNW	MT	0.01E	0.01
	SACM8	SACO 7NE, MILK R	MT	0.01	0.01

MODT1	SALEM 2NW	MO	0.01E	0.01
SHLM7	SCHELL CITY	MO	0.01E	0.01
SNCS2	SENECA 15SSE	SD	0.01E	0.01
SBCM8	SILVER GATE 2WSW	MT	0.01	0.01

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SKLM8	SKYLARK TRAIL	MT	0.01E	0.01
SMHM7	SMITHVILLE	MO	0.01E	0.01
SLKM7	SMITHVILLE DAM	MO	0.01E	0.01
SNKW4	SNAKE RIVER	WY	0.01	0.01
SKCM8	SOUTH KIRBY RAW	MT	0.01E	0.01
SSMM8	SOUTH SAWMILL GDDS	MT	0.01	0.01
SPD	SPRINGFIELD	CO	0.01	0.01
STPM7	ST PETERS	MO	0.01E	0.01
SPEM7	ST PETERS 2SSE	MO	0.01	0.01
0124N8	STERLING 6SE	ND	0.01E	0.01
SETM7	STET 1S	MO	0.01E	0.01
0392N8	STREETER 5S	ND	0.01E	0.01
TWRW4	TOWER FALLS	WY	0.01E	0.01
TULS2	TULARE, TURTLE CR	SD	0.01E	0.01
TURS2	TURTON	SD	0.01	0.01
VERS2	VERMILLION 3N	SD	0.01E	0.01
VOLS2	VOLGA	SD	0.01E	0.01
VNAC2	VONA	CO	0.01E	0.01
WGOK1	WAMEGO	KS	0.01E	0.01
WMGK1	WAMEGO #2, KANSAS R	KS	0.01E	0.01
WAMK1	WAMEGO 4W	KS	0.01E	0.01
WRNS2	WARNER	SD	0.01E	0.01
WVYM7	WAVERLY	MO	0.01E	0.01
WGS2	WESSINGTON 8NE	SD	0.01E	0.01
WMLK1	WESTMORELAND	KS	0.01E	0.01
WESW4	WESTON 1E	WY	0.01E	0.01
WSSM8	WHITE SULPHUR SPRNGS	MT	0.01E	0.01
WGSM8	WHITE SULPHUR SPRNGS	MT	0.01E	0.01
WITM8	WINNETT 12SW	MT	0.01E	0.01
WIAK1	WINONA 8W	KS	0.01E	0.01
WINK1	WINONA 8W	KS	0.01E	0.01
COYU58	WRAY 1WSW	CO	0.01E	0.01
ZAPN8	ZAP, SPRING CR	ND	0.01E	0.01

>>>>>>> STOP

0 CPU TIME USED = 0 MINUTES, 0 SECONDS

0 CLOCK TIME USED = 0 MINUTES, 1 SECONDS

NWO

From: [REDACTED] NWK
Sent: Monday, June 20, 2011 10:43 AM
To: Farhat, Jody S NWD02
Subject: RE: Gavins Point May Spring Pulse Update (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody - appreciate all your efforts to tell our story on the flood fight and why we did (or did not do) what we did with releases leading up to the end of May. Came across this email today that you sent to Congressionals and stakeholders that gives a fair assessment of where we thought things were heading as of April 6.

Respectfully,

[REDACTED] PE, PMP
Deputy District Engineer for Project Management Chief, Planning, Programs and Project Management Division US Army Corps of Engineers, Kansas City District
(W) [REDACTED]
(C) [REDACTED]

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Wednesday, April 06, 2011 1:58 PM
To: Farhat, Jody S NWD02; 'aaron_popelka@moran.senate.gov'; 'Adams, Steve'; 'alan.feyerherm@mail.house.gov'; Anderson, G Witt NWD; 'ansley.mick@mail.house.gov'; [REDACTED]; [REDACTED]; [REDACTED] NWO; Blechinger, Erik T NWO; 'brian_klippenstein@blunt.senate.gov'; 'brianne_dugan@baucus.senate.gov'; 'Bryggman, Tim'; 'Casteel, Kelly D.'; 'chad.ramey@mail.house.gov'; 'Charlie Scott'; 'chrisbrown@mail.house.gov'; 'christina.mahoney@mail.house.gov'; 'Cindy_Hall@mccaskill.senate.gov'; 'colin.brainard@mail.house.gov'; [REDACTED] NWK; 'corey_dukes@mccaskill.senate.gov'; 'd_schwietert@thune.senate.gov'; 'Dan.Engemann@mail.house.gov'; 'darwin.curls@mail.house.gov'; 'dayle_williamson@bennelson.senate.gov'; 'Dean.Mathisen@mail.house.gov'; 'deb.vanmatre@mail.house.gov'; [REDACTED] NWD02; 'don_canton@hoeven.senate.gov'; [REDACTED]; [REDACTED] NWO; 'edwin.elfmann@mail.house.gov'; 'Engelhardt, Bruce W.'; 'eric.bierwagen@mail.house.gov'; 'eric.bohl@mail.house.gov'; 'erick_lutt@bennelson.senate.gov'; Farmer, Monique L NWO; [REDACTED] NWK; [REDACTED] HQ; 'Garland.Erbele@state.sd.us'; 'gary.marble@mail.house.gov'; 'Gaul, Steve'; [REDACTED] NWK; [REDACTED] HQ02; [REDACTED] NWD02; [REDACTED] NWD02; 'harold_stones@roberts.senate.gov'; 'Henry Maddux'; Hofmann, Anthony J COL NWK; [REDACTED] NWK; 'janna.worsham@mail.house.gov'; 'Jenny Frazier'; Mitas, Jim MVS External Stakeholder; 'Jim.Riis@state.sd.us'; 'John Drew'; 'Karen Rouse'; 'ken.kopocis@mail.house.gov'; [REDACTED] NWK; [REDACTED] NWD02; [REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWD02; 'Mark.Rath@state.sd.us'; 'marty_boeckel@conrad.senate.gov'; [REDACTED] NWO; McMahon, John R BG NWD; 'melissa.roe@mail.house.gov'; 'mike.hayden@outdoors.com'; 'mike.matousek@mail.house.gov'; 'nathan_taylor@tester.senate.gov'; 'nathan_vanderplaats@harkin.senate.gov'; 'nichole_distefano@mccaskill.senate.gov'; 'patrick.carroll@mail.house.gov'; 'patrick_lehman@johanns.senate.gov'; [REDACTED] NWO; [REDACTED] NWK; 'peter_henry@blunt.senate.gov'; 'phil_erdman@johanns.senate.gov'; [REDACTED] NWD; 'randy.vogel@mail.house.gov'; [REDACTED] NWO; 'richard.henkle@mail.house.gov'; 'richard_bender@harkin.senate.gov'; Ruch, Robert J COL NWO;

'ryan_flickner@roberts.senate.gov'; [REDACTED] NWO; 'scott.corrie@mail.house.gov';
[REDACTED] NWD; 'shane_goettler@hoeven.senate.gov'; 'sharon_boysen@johnson.senate.gov';
'sherry_kuntz@grassley.senate.gov'; [REDACTED] NWK; [REDACTED] HQDA; [REDACTED]
NWD02; 'Stephen Guertin'; 'stephenne_harding@tester.senate.gov'; [REDACTED] NWO;
[REDACTED] NWD02; [REDACTED] NWO; 'Todd Sando';
'tracee_sutton@conrad.senate.gov'; 'Tracy Streeter'; 'wayne.brincks@mail.house.gov';
'Wayne_NelsonStastny@fws.gov'; [REDACTED] MVS External Stakeholder; 'Westrup, Nathan';
'zach_nelson@bennelson.senate.gov'; Karen Rouse; [REDACTED] NWD
Subject: Gavins Point May Spring Pulse Update (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

All - This is lining up to be another very high runoff year in the Missouri River basin. Over 5.5 million acre feet of floodwater is already stored in the reservoir system and more is on its way due to the melt of the remainder of the plains snowpack and above normal mountain snowpack. As a result we have started to evacuate floodwater at a rate of 10,000 cfs above full service navigation flows. The flood water evacuation is expected to last through early December. The increased releases will result in stages roughly 2 feet above normal in the lower Missouri River basin, but well within the channel.

The higher releases will also prevent implementation of the May spring pulse from Gavins Point Dam to benefit the endangered pallid sturgeon. Flows at Omaha and Nebraska City will be above the flow limits due to the higher releases, essentially closing the window of opportunity to run the spring pulse. The downstream flow limits are safeguards to reduce or eliminate the pulse to ensure that it does not cause flooding of agricultural land along the river during the pulse.

Call or email if you have questions.

Regards,
Jody

Jody Farhat, P.E.
Chief, Missouri River Basin Water Management

jody.s.farhat@usace.army.mil
Office: [REDACTED]

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 10:33 AM
To: DLL-CENWO-OD-GA; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] HQ02;
[REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] WO; [REDACTED] NWO; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Garrison Staff Notes (UNCLASSIFIED)
Attachments: 6-20 Garrison Flood Fight Daily Staff Notes.docx; Main Stem Regulation Forecast - Three-Week (6-19).mht

Classification: UNCLASSIFIED
Caveats: FOUO

Attached...

[REDACTED] P.E.
Operations Project Manager
Garrison Project

Classification: UNCLASSIFIED
Caveats: FOUO

**Garrison Flood Fight
Daily Staff Notes
Monday, 20 June 2011**

Forecast/Flows/River Monitoring:

- Lake Sakakawea:
 - Current Reservoir Elevation: 1854.15. Yesterday's elevation: 1854.00
 - Current Tail water Elevation 1684.56. Yesterday's elevation 1684.53
 - Stilling Basin (a.k.a. Spillway Pond) elevation: 1686.7
 - Estimated Inflows today: 165,500 cfs. Inflows yesterday: 173,700 cfs.
 - Releases: 150,000 cfs.
 - Spillway gates 1 through 28 are open 2 feet.
 - Day water release distribution: Power Plant - 31,000 cfs, Regulating Tunnels - 58,000 cfs, Spillway - 61,000 cfs.
 - Night water release distribution: Power Plant - 16,000 cfs, Regulating Tunnels - 73,000 cfs, Spillway - 61,000 cfs.
 - We are shifting our releases between the regulatory tunnels and the power plant to provide load control for WAPA. Scheduled load and water release changes are being made at 0800 and 2000 hours.
- Fort Peck releases 65,000 cfs, scheduled to go down to 60,000 cfs today.
- Missouri River Elevations:
 - Bismarck gage: Currently 18.82 feet. Yesterdays gage was 18.72 feet. Protection measures in Bismarck are to 21.6 feet with a forecasted crest of 20.6 feet.
 - Williston gage: The river gage as of yesterday afternoon was 30.43 feet. Gage was 30.20 yesterday morning. Previous record stage: 28.0 feet.
- Current Snowpack: Snow pack data not updated for today...
 - Ft Peck - crested at 141% of normal peak; currently 64% of the normal peak remains.
 - Garrison - crested at 136% of peak; currently 62% of the normal peak remains.

Garrison Dam Surveillance:

- Surveillance: Team Leader, Dave Bobczynski, cell: (701) 775-0110. Instrumentation: Team Leader [REDACTED], cell: (701) 775-0110
- Spillway: Inspection team noted different flow patterns on the walls below gates 27 and 28. Power plant personnel will check to see if there is debris caught under these two gates?
- Embankment: Downstream slopes, crest and toe are in good condition with no concerns at this time. Waterline metering manhole by power plant entrance was pumped dry and has remained dry since yesterday. Manhole discharge in north abutment slope appears to be less than anticipated, even though piezometer readings continue to rise. Slope is stable but is being monitored closely.
- East Abutment: All seeps (1 through 4) have enlarged in extent, but discharge remains clear. Project received couple more isolated rain events. Once we have

period of a day or two of dry weather, these areas will be mapped again and plotted.

- Tailrace: Sandbag diversion on pier 8 was rebuilt and appears to be holding up and minimizing headcuts for time being.
- Surveillance Plans: 24 hour surveillance plan is quickly being formulated. The timeframe for hitting record pools has moved up significantly from previous 3-week forecasts.
- Surcharge of Reservoir: In order to provide an acceptable level of freeboard on the spillway gates we will have to begin shifting flows from the regulating tunnels over to the spillway as early as this Friday.

Snake Creek Embankment/ Lake Audubon:

- Surveillance: Was assessed yesterday. No significant issues were noted.
- Lake Audubon has been filled to elevation 1849.5 to utilize additional storage. Currently we do not plan to increase that elevation.

Williston Levee:

- POC's [REDACTED], cell: [REDACTED]
- No new pin boils or issues noted yesterday.
- Three pumps were run yesterday as the elevation of the march continued to increase. In addition to cattails, milfoil is beginning to become a problem in operating the pumping plant.

Natural Resources:

- POC's [REDACTED], cell: [REDACTED]
- Very busy weekend. It was estimated that over 5,000 people stopped to view the Spillway yesterday. Law enforcement is doing a good job directing traffic and people.
- [REDACTED] and [REDACTED] from the District Office, assisted the Garrison Project over the weekend. The assistance is much appreciated!

Outside Maintenance:

- Will coordinate adding rock to the lower end of the tailrace riprap on both East and West banks, as the current and fluctuating tailrace elevations are back cutting the riprap. Current conditions will not allow access on the East bank as it is too muddy. Work will be pursued as soon as conditions permit.
- Coordinating with Dave Sobczyk to perform a boat inspection of the upstream embankment this morning and to flush a couple of drain lines today.
- Temporary water line: If a leak is noted, notify your supervisor, [REDACTED], or I ASAP. Also notify City of Riverdale, "Clay" at (701) 471-6433 or [REDACTED] ext. 232, or home [REDACTED]. Shutoff valves located on the line. A drawing showing the locations of these valves is posted in the Outside Maintenance shop. A valve key to close the valves is located immediately inside the front door of the maintenance building.

Power Plant:

- Going back to four units generating today and backing off again this evening to meet WAPA load demands. Changes will be made at 8:00 am and 8:00 pm. Load changes are scheduled to be made through the weekend to assist WAPA with anticipated load demands.
- Drawings for monitoring and/or automation of the regulating tunnel gates have been sent to Omaha for review/concurrence and to ensure compliance with EC 1110-2-6071, which restricts remote operations for water control features that pose life safety risk. Concerns remain that automation will further exacerbate the desire to operate these gates frequently as part of power load control for WAPA.

I still want an Engineering opinion regarding whether these gates are designed for such use?

Weather/Safety:

<p>Today: Rain showers this morning, becoming a steady, soaking rain during the afternoon hours with a few rumbles of thunder possible. High 68F. Winds ENE at 5 to 10 mph. Chance of rain 70%. Rainfall near a quarter of an inch.</p>	<p>Tonight: Showers and thunderstorms likely. Low 57F. Winds ENE at 5 to 10 mph. Chance of rain 80%.</p>	<p>Monday: Showers with a possible thunderstorm in the morning, then variable clouds during the afternoon with still a chance of showers. High 63F. Winds NE at 5 to 10 mph. Chance of rain 60%.</p>
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- Mike Morris and Charles Sorensen have volunteered to work on evacuation plans. I still need to coordinate with them on development of these plans.

Needed Resources:

- Overview maps to be utilized for dam safety surveillance are to be printed in Omaha and Fed-exed to the project.
- Currently working with ACE-IT and looking into upgrading our radios so that we can utilize them effectively for local communication. Cell phone coverage is spotty in several locations. Signal booster has been ordered to improve cell phone reception.
- [REDACTED] is working on the contract with the Conservancy District for rip rap repairs. Hope to have a contract awarded today. Contract covers next 8 weeks with labor and equipment needs assumed for 3 days per week. OD-GA Tech Support will need to track actual days used on Contract.
- [REDACTED] to forward the contract specifications for crane services necessary to place stop logs for the inspection of the regulatory tunnels. Inspection is being scheduled for the week of July 11th. [REDACTED] to coordinate Omaha inspection team members needed, as well as which repair product needs to be ordered.

Any resource needs, safety issues, or emergencies should be directed to your team leaders/POC immediately. If they cannot be reached contact [REDACTED] (cell: [REDACTED]) / Home: [REDACTED]).

OPM Notes:

- Increased surcharge, and required freeboard, will complicate our gate operations. We will lose flexibility to utilize the regulating tunnels and will eventually be in a position where spillway gates will have to be operated to accommodate changes in plant loads.
- 24 hour surveillance will be required to begin this Thursday.
- Our survey crew is on site and will be conducting the Garrison to Oahe water surface profiles Tuesday and Wednesday, June 21st and 22nd.
- Everyone needs to be watching for large trees/debris that is headed for our spillway. If large debris is noted, Outside Maintenance should be notified ASAP.
- Request has been made to USGS to survey the Spillway and Tailrace Channels. Survey is scheduled to be done on 22 June.
- Many folks are working long hours and/or late shifts. Please watch out for each other and ensure that safety procedures are followed!

This regulation forecast was made using computed reservoir inflows based on 5-days of forecast precipitation and mountain snowmelt runoff. The regulation forecast is subject to change daily as actual events occur.

* Indicates release changes from previous forecast

												REGULATION FORECAST 06/19/11											
FTPK				GARR				OAHE				BEND				FTRA							
24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE				
19		2252.0	50.0	65.0	5.13	1854.0	180.8	150.0	9.27	1618.7	166.1	160.0	13.90	1419.9	160.0	160.0	8.31	1365.1	168.3	143.0	9		
20	M	2251.9	48.0	60.0	5.13	1854.2	188.6	150.0	9.28	1618.7	165.9	160.0	13.90	1419.9	160.0	160.0	8.24	1365.5	166.2	143.0	9		
21	T	2251.8	46.0	60.0	5.13	1854.4	196.2	150.0	9.30	1618.7	164.0	160.0	13.90	1419.9	160.0	160.0	8.18	1365.9	164.2	145.0	9		
22	W	2251.6	43.0	60.0	5.12	1854.7	192.7	150.0	9.31	1618.7	166.0	160.0	13.90	1419.9	160.0	160.0	8.13	1366.3	163.8	147.0	9		
23	T	2251.5	41.0	60.0	5.12	1854.9	188.8	150.0	9.32	1618.8	173.0	160.0	13.91	1419.9	160.0	160.0	8.08	1366.6	163.3	148.0	9		
24	F	2251.3	40.0	60.0	5.11	1855.0	181.6	150.0	9.33	1618.9	177.0	160.0	13.91	1419.9	160.0	160.0	8.03	1366.9	162.4	148.0	9		
25		2251.2	40.0	60.0	5.11	1855.2	175.0	150.0	9.33	1619.0	178.0	160.0	13.92	1419.9	160.0	160.0	7.99	1367.2	162.3	148.0	9		
26		2251.0	46.0	60.0	5.11	1855.2	168.0	150.0	9.34	1619.1	177.0	160.0	13.93	1419.9	160.0	160.0	7.94	1367.5	162.2	148.0	9		
27	M	2251.0	50.0	60.0	5.11	1855.3	159.0	150.0	9.34	1619.1	170.0	160.0	13.93	1419.9	160.0	160.0	7.90	1367.8	162.1	148.0	9		
28	T	2250.9	56.0	60.0	5.11	1855.3	154.0	150.0	9.34	1619.1	164.0	160.0	13.93	1419.9	160.0	160.0	7.85	1368.1	161.9	148.0	9		
29	W	2250.9	62.0	60.0	5.11	1855.3	152.0	150.0	9.34	1619.1	160.0	160.0	13.93	1419.9	160.0	160.0	7.81	1368.3	161.7	148.0	9		
30	T	2251.0	70.0	60.0	5.11	1855.3	151.0	150.0	9.34	1619.1	158.0	160.0	13.93	1419.9	160.0	160.0	7.77	1368.6	161.5	148.0	9		
1	F	2251.1	74.0	60.0	5.11	1855.4	160.0	150.0	9.34	1619.1	156.0	160.0	13.93	1419.9	160.0	160.0	7.72	1368.9	161.2	148.0	9		
2		2251.2	74.0	60.0	5.11	1855.5	173.0	150.0	9.35	1619.1	155.0	160.0	13.92	1419.9	160.0	160.0	7.68	1369.1	161.0	148.0	9		
3		2251.3	65.0	60.0	5.11	1855.6	174.0	150.0	9.35	1619.0	154.0	160.0	13.92	1419.9	160.0	160.0	7.64	1369.4	160.9	148.0	9		
4	M	2251.2	60.0	60.0	5.11	1855.7	168.0	150.0	9.36	1619.0	153.0	160.0	13.92	1419.9	160.0	160.0	7.60	1369.7	160.7	148.0	9		
5	T	2251.2	59.0	60.0	5.11	1855.7	165.0	150.0	9.36	1618.9	152.0	160.0	13.91	1419.9	160.0	160.0	7.57	1369.9	160.5	148.0	9		
6	W	2251.2	54.0	60.0	5.11	1855.8	168.0	150.0	9.37	1618.9	152.0	160.0	13.91	1419.9	160.0	160.0	7.53	1370.2	160.4	148.0	9		
7	T	2251.1	50.0	60.0	5.11	1855.9	165.0	150.0	9.37	1618.8	152.0	160.0	13.91	1419.9	160.0	160.0	7.49	1370.4	160.2	148.0	9		
8	F	2251.0	49.0	60.0	5.11	1855.9	162.0	150.0	9.37	1618.8	152.0	160.0	13.90	1419.9	160.0	160.0	7.45	1370.7	160.2	148.0	9		
9		2250.9	49.0	60.0	5.10	1856.0	161.0	150.0	9.38	1618.7	152.0	160.0	13.90	1419.9	160.0	160.0	7.41	1370.9	160.2	148.0	9		
10		2250.8	48.0	60.0	5.10	1856.0	160.0	150.0	9.38	1618.7	152.0	160.0	13.90	1419.9	160.0	160.0	7.38	1371.1	160.2	148.0	9		
11	M	2250.7	47.0	60.0	5.10	1856.1	158.0	150.0	9.38	1618.6	152.0	160.0	13.89	1419.9	160.0	160.0	7.34	1371.4	160.2	148.0	9		
12	T	2250.5	46.0	60.0	5.10	1856.1	154.0	150.0	9.38	1618.5	152.0	160.0	13.89	1419.9	160.0	160.0	7.30	1371.6	160.2	148.0	9		
13	W	2250.4	45.0	60.0	5.09	1856.1	150.0	150.0	9.38	1618.5	152.0	160.0	13.88	1419.9	160.0	160.0	7.26	1371.9	160.2	148.0	9		
14	T	2250.3	44.0	60.0	5.09	1856.1	148.0	150.0	9.38	1618.4	152.0	160.0	13.88	1419.9	160.0	160.0	7.23	1372.1	160.2	148.0	9		
15	F	2250.1	38.0	60.0	5.09	1856.0	145.0	150.0	9.38	1618.4	152.0	160.0	13.88	1419.9	160.0	160.0	7.19	1372.4	160.2	148.0	9		

Project:

24EL Midnight Elevation (feet above mean sea level)
 24ID Daily Average Inflow (kcfs)
 24OD Daily Average Release (kcfs)
 24GE Daily Power Generation (MWh)

System:

GE Daily Power Generation (MWh)
 SG Midnight Storage (AF)
 DSG Daily Storage Change (AF)

Units:

kcfs thousand cubic feet per second
 MWh megawatt hour
 AF acre-feet

Pagemaster: Water Management; CENWD-PDR;

Internet E-Mail Address: Missouri.Water.Management@nwd02.usace.army.mil

Subject: Missouri River Conference Call 4:30 pm (1630) CDT 06-20-2011

Magnolia Marine Transport Company
Captain Lester Cruise III
Port Captain
Office: (800) 696-5921 24-Hour Number
Desk: (601) 802-8602
Cell: (601) 831-1406
Fax: (601) 638-8475

lcruseiii@gmail.com

Tough times never last, but tough people do with Gods Help!

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 10:29 AM
To: Ruch, Robert J COL NWO; [REDACTED] NWO; Farhat, Jody S NWD02
Subject: RE: Oahe Releases (UNCLASSIFIED)

Sir,

Spoke with [REDACTED]. He was asking as a goodwill gesture due to the rain. There are no impacts from the 5K at this time. [REDACTED] understands that we will probably continue with the planned releases. [REDACTED]

-----Original Message-----

From: Ruch, Robert J COL NWO
Sent: Monday, June 20, 2011 9:44 AM
To: Thomas, Kimberly S NWO; [REDACTED] NWO; Farhat, Jody S NWD02
Subject: RE: Oahe Releases (UNCLASSIFIED)

How does a 5000k cfs back off impact internal drainage?

-----Original Message-----

From: Thomas, Kimberly S NWO
Sent: Monday, June 20, 2011 9:11 AM
To: Ruch, Robert J COL NWO; [REDACTED] NWO
Subject: FW: Oahe Releases (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

FYI

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[REDACTED]@usace.army.mil

-----Original Message-----

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 8:45 AM
To: Farhat, Jody S NWD02
Subject: Oahe Releases (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Jody,

Oahe is requesting that RCC consider reducing flows from Oahe by 5kcfs for today and tomorrow due to the significant rainfall and interior drainage issues the cities are facing.

Thanks,
[REDACTED]

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[REDACTED] [\[REDACTED\]@usace.army.mil](mailto:[REDACTED]@usace.army.mil)

Classification: UNCLASSIFIED
Caveats: FOUO

Classification: UNCLASSIFIED
Caveats: FOUO

NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 10:27 AM
To: CENWO-EOC NWO; [REDACTED] NWO; [REDACTED] NWD; [REDACTED]
[REDACTED] NWO; [REDACTED]@noaa.gov; [REDACTED]@noaa.gov; [REDACTED] NWO; [REDACTED]
[REDACTED] NWO; [REDACTED] Maj NWO; DLL-CENWO-EOC CMT-ALL; [REDACTED] or,
[REDACTED] NWO; Farhat, Jody S NWD02; Farmer, Monique L NWO; [REDACTED] L NWO;
[REDACTED] R NWO; [REDACTED] WK; [REDACTED] NWK; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
[REDACTED]@ NWO; [REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
[REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWK; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED]@noaa.gov; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
M NWO; [REDACTED]@noaa.gov; Ruch, Robert J COL NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] Col NWD; [REDACTED] NWO; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; Williamson, Eileen L NWO; [REDACTED] A
NWD; Blechinger, Erik T NWO; [REDACTED] C NWK; [REDACTED] LRC; [REDACTED]
SPK; [REDACTED] A SWG; [REDACTED] A NWO; [REDACTED] NWO; [REDACTED]
[REDACTED] SWL; [REDACTED] A NWO; [REDACTED] NWO; [REDACTED]
NWO
Subject: Riverwatch Daily Update June 20, 2011 (UNCLASSIFIED)
Attachments: Flood_Fight_Storyboard_20JUN.docx

Classification: UNCLASSIFIED

Caveats: NONE

Missouri River Mainstem Reservoir Bulletin (Updated 20 Jun; 0900 CDT)

Fort Peck (In operation since 1940)

Midnight Elevation

* 2252.0 ft msl

* 24-hr Change (-0.1 ft)

Daily Avg. Inflow

* 51,000 cfs (19 Jun)

* 50,000 cfs (18 Jun)

Daily Avg. Release

* 65,500 cfs (19 Jun)

* 65,500 cfs (18 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 2246 ft msl - 2250 ft msl

Top of Spillway Gates

* 2250 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 65,000 cfs.

* Reservoir will use several feet of surcharge storage above the exclusive flood control pool as spillway gates are raised.

Record Pool Elevation (Year)

* 2251.6 msl (1975)

Record Flow (Year)

* 35,000 cfs (1975)

Projected Record Flow (Date)

* 65,000 cfs (Mid June)

Garrison (In operation since 1955)

Midnight Elevation

* 1853.9 ft msl

* 24-hr Change (+0.0 ft)

Daily Avg. Inflow

* 165,000 cfs (19 Jun)

* 169,000 cfs (18 Jun)

Daily Avg. Release

* 150,200 cfs (19 Jun)

* 150,000 cfs (18 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1850 ft msl - 1854 ft msl

Top of Spillway Gates

* 1854 ft msl

River Stage (Bismarck)

* 18.81 (0715 CDT 20 Jun)

* Flood stage - 16 ft

* 18.82 (0815 CDT 19 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

* Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

* 1854.8 msl (1975)

Record Flow (Year)

* 65,000 cfs (1975)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Oahe (In operation since 1962)

Midnight Elevation

* 1618.6 ft msl

* 24-hr Change (+0.1 ft)

Daily Avg. Inflow

* 153,000 cfs (19 Jun)

* 156,000 cfs (18 Jun)

Daily Avg. Release

- * 158,700 cfs (19 Jun)
- * 153,600 cfs (18 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1617 ft msl - 1620 ft msl

Top of Spillway Gates

- * 1620 ft msl

River Stage (Pierre)

- * 19.33 (0730 CDT 20 Jun)
- * Flood stage - 15 ft
- * 19.11 (0830 CDT 19 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up to 160,000 cfs by mid June.
- * Reservoir will peak within a foot of the top of the spillway gates at 1619 feet.

Record Pool Elevation (Year)

- * 1618.7 msl (1995)

Record Flow (Year)

- * 59,000 cfs (1997)

Projected Record Flow (Date)

- * 160,000 cfs (Mid June)

Big Bend (In operation since 1964)

Midnight Elevation

- * 1419.4 ft msl
- * 24-hr Change (-0.1 ft)

Daily Avg. Inflow

- * 156,000 cfs (19 Jun)
- * 150,000 cfs (18 Jun)

Daily Avg. Release

- * 158,800 cfs (19 Jun)
- * 153,000 cfs (18 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1422 ft msl - 1423 ft msl

Top of Spillway Gates

- * 1423 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up to 160,000 cfs by mid June.
- * Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

* 1422.1 msl (1991)

Record Flow (Date)

* 74,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Mid June)

Fort Randall (In operation since 1953)

Midnight Elevation

* 1365.1 ft msl

* 24-hr Change (+0.6 ft)

Daily Avg. Inflow

* 171,000 cfs (19 Jun)

* 158,000 cfs (18 Jun)

Daily Avg. Release

* 143,600 cfs (19 Jun)

* 143,600 cfs (18 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1365 ft msl - 1375 ft msl

Top of Spillway Gates

* 1375 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 148,000 cfs by mid to late June.

Record Pool Elevation (Year)

* 1372.2 msl (1997)

Record Flow (Date)

* 67,000 cfs (1997)

Projected Record Flow (Date)

* 148,000 cfs (Mid to late June)

Gavins Point (In operation since 1955)

Midnight Elevation

* 1207.6 ft msl

* 24-hr Change (-0.1 ft)

Daily Avg. Inflow

* 148,000 cfs (19 Jun)

* 149,000 cfs (18 Jun)

Daily Avg. Release

* 150,000 cfs (19 Jun)

* 150,100 cfs (18 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1208 ft msl - 1210 ft msl

Top of Spillway Gates

* 1210 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

Record Pool Elevation (Year)

* 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Release and inflow figures include a + or - 1 percent variation Source of information:

<http://www.nwd-mr.usace.army.mil/rcc>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 20 Jun; 0900 CDT)

24-hr forecast (Glasgow, MT)

Today: Slight chance of showers before 9am, then a chance of showers and t-storms after noon. Mostly sunny, with high near 75. North northeast wind 5 to 11 mph. Chance of precipitation is 30%.

Tonight: 30% chance of showers and t-storms before midnight. Mostly cloudy, with a low around 54. North northeast wind 3 to 8 mph.

Tuesday: Slight chance of showers, with t-storms also possible after noon. Partly sunny, with a high near 76. North northwest wind 5 to 13 mph. Chance of precipitation is 20%.

24-hr forecast (Williston, ND)

Today: Showers likely and possibly a t-storm. Cloudy, with high near 68. North wind 7 to 11 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

Tonight: Chance of showers and t-storms, then showers likely after 1am. Cloudy, with a low around 54. North wind 5 to 9 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

Tuesday: Showers likely and possibly a t-storm. Cloudy, with high near 65. North wind 5 to 11 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

24-hr forecast (Riverdale, ND)

Today: Showers with rain heavy at times. High near 66. East wind 3 to 10 mph. Chance of precipitation is 100%. New rainfall amounts 0.25 to 0.5 inch possible.

Tonight: Showers and possibly a t-storm before 1am, then a chance of showers. Some storms could produce heavy rainfall. Low around 58. East wind around 9 mph. Chance of precipitation is 80%. New rainfall amounts 0.25 to 0.5 inch possible.

Tuesday: Showers likely and possibly a t-storm. Cloudy, with a high near 65. East wind 8 to 14 mph, with gusts as high as 20 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

24-hr forecast (Washburn, ND)

Today: Showers with rain heavy at times. High near 65. East wind 3 to 11 mph. Chance of precipitation is 100%. New rainfall amounts 0.25 to 0.5 inch possible.

Tonight: Showers and possibly a t-storm before 1am, then a chance of showers. Some storms could produce heavy rainfall. Low around 58. East wind around 9 mph. Chance of precipitation is 80%. New rainfall amounts 0.25 to 0.5 inch possible.

Tuesday: Showers likely and possibly a t-storm. Cloudy, with a high near 64. Northeast wind 9 to 15 mph, with gusts as high as 22 mph. Chance of precipitation is 70%. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Bismarck/Mandan, ND)

Today: Showers with rain heavy at times. High near 66. East wind 5 to 11 mph. Chance of precipitation is 100%. New rainfall amounts between 0.25 to 0.5 inch possible.

Tonight: Showers and a possible t-storm. Some storms could produce heavy rainfall. Low around 58. East wind 8 to 10 mph. Chance of precipitation is 80%. New rainfall amounts between 0.25 to 0.5 inch possible.

Tuesday: Showers and a possible t-storm. Some storms could produce heavy rainfall. High near 62. Northeast wind 10 to 18 mph, with gusts as high as 25 mph. Chance of precipitation is 80%. New rainfall amounts between 0.25 to 0.5 inch possible.

24-hr forecast (Pierre, SD)

Today: Showers and t-storms. High near 69. Northeast wind 14 to 18 mph. Chance of precipitation is 90%.

Tonight: Showers and t-storms. Low around 61. North northeast wind around 22 mph, with gusts as high as 31 mph. Chance of precipitation is 100%.

Tuesday: Showers likely and possibly a t-storm. Cloudy, with a high near 65. North wind 23 to 29 mph, with gusts as high as 40 mph. Chance of precipitation is 70%.

24-hr forecast (Ft. Pierre, SD)

Today: Showers and t-storms. High near 69. North northeast wind 14 to 18 mph. Chance of precipitation is 90%.

Tonight: Showers and t-storms. Low around 61. North northeast wind around 22 mph, with gusts as high as 31 mph. Chance of precipitation is 100%.

Tuesday: Showers likely and possibly a t-storm. Cloudy, with high near 66. North wind between 23 and 29 mph, with gusts as high as 40 mph. Chance of precipitation is 70%.

24-hr forecast (Lower Brule, SD)

Today: Showers and t-storms. High near 73. Northeast wind 15 to 21 mph. Chance of precipitation is 90%.

Tonight: Showers and t-storms. Low around 61. Northeast wind 16 to 21 mph. Chance of precipitation is 100%.

Tuesday: Showers likely and possibly a t-storm. Cloudy, with a high near 65. North wind 17 to 26 mph, with gusts as high as 37 mph. Chance of precipitation is 70%.

24-hr forecast (Chamberlain, SD)

Today: Showers and t-storms. Some storms could produce heavy rain. High near 73. Northeast wind 13 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 80%. New rainfall amounts 0.5 to 0.75 inch possible.

Tonight: Showers and t-storms. Some storms could produce heavy rain. Low around 61. Northeast wind 13 to 20 mph, with gusts as high as 28 mph. Chance of precipitation is 100%. New rainfall amounts 1 to 2 inches possible.

Tuesday: Showers and t-storms. Some storms could produce heavy rain. High near 66. North northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 80%. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Yankton, SD)

Today: Showers and t-storms likely, mainly after 4pm. Some storms could produce heavy rain. Partly sunny, with high near 82. East wind 14 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

Tonight: Showers and t-storms. Some storms could produce heavy rain. Low around 65. East northeast wind 9 to 15 mph. Chance of precipitation is 80%. New rainfall amounts 0.75 to 1 inch possible.

Tuesday: Showers and t-storms likely. Some storms could produce heavy rain. Cloudy, with a high near 69. North wind 9 to 17 mph, with gusts as high as 25 mph. Chance of precipitation is 70%. New rainfall amounts 0.5 to 0.75 inch possible.

24-hr forecast (Sioux City, IA)

Today: Showers and t-storms likely, mainly after 4pm. Some storms could produce heavy rain. Partly sunny, with high near 86. East wind 13 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

Tonight: Showers and t-storms likely. Some storms could produce heavy rain. Mostly cloudy, with low around 67. East southeast wind 8 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.5 to 0.75 inch possible.

Tuesday: Showers and t-storms likely. Some storms could produce heavy rain. Cloudy, with high near 74. East wind 9 to 14 mph becoming southwest. Chance of precipitation is 60%. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Omaha, NE)

Today: 20% chance of showers and t-storms after 4pm. Some storms could be severe, with large hail and damaging winds. Mostly sunny, with high near 86. South southeast wind around 17 mph, with gusts as high as 26 mph.

Tonight: Showers and t-storms likely, mainly between 7pm and 1am. Some storms could be severe, with large hail and damaging winds. Mostly cloudy, with low around 66. South wind 10 to 20 mph, with gusts as high as 28 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

Tuesday: Chance of showers, with t-storms possible after 1pm. Mostly cloudy, with high near 75. West southwest wind 13 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 50%. New rainfall amounts of 0.1 inch, higher amounts possible in t-storms.

Source of information: <http://www.weather.gov/>
Internet: <http://www.nwo.usace.army.mil>
Facebook: <http://www.facebook.com/OmahaUSACE>
Twitter: <http://www.twitter.com/OmahaUSACE>
YouTube: <http://www.youtube.com/OmahaUSACE>
Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Flooding (Logistics) (Updated 20 Jun; 0900 CDT) Personnel Deployed

7 (Glasgow, MT)
1 (Garrison, ND)
4 (Bismarck, ND)
1 (Fort Yates, ND)
6 (Williston, ND)
5 (Pierre, SD)
1 (Kansas City, MO)
3 (Sioux City, IA)
1 (S. Sioux City, NE)
1 (Onawa, IA)
16 (Missouri River Survey - 7 teams)
1 (Lincoln, NE)
1 (Offutt, NE)
4 (North Platte, NE)
5 (Hamburg, IA)

Equipment Deployed

HESCO (3' and 4')
Issued: 74,270 LF
On Hand: 30,950 LF
Projected Outstanding Requirements: 35,000 LF

Sandbags

Issued: 14,637,000
On Hand: 6,923,500
Projected Outstanding Requirements: 6.5 M

Poly Rolls

Issued: 2,836 rolls
On Hand: 1,987 rolls
Projected Outstanding Requirements: 1,500 rolls

Pumps

Issued: 48 pumps
On Hand: 4 pumps (3 - serviceable)
Projected Outstanding Requirements: 20 pumps

Slingbags

On Hand: 1,350 slingbags (2K lbs each)

Heavybags

On Hand: 6,420 heavybags (35x35x35 each)

Geotextile

On Hand: 4 rolls (16' wide; 500 sq ft)

Additional Supplies due in:

1 pump waiting on PTO shaft
HESCO: 4,750 LF

Source of information: CMT Brief (19 Jun 11)

Classification: UNCLASSIFIED

Caveats: NONE



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem Reservoir Bulletin (Updated 20 Jun; 0900 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation <ul style="list-style-type: none">2252.0 ft msl24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none">51,000 cfs (19 Jun)50,000 cfs (18 Jun) Daily Avg. Release <ul style="list-style-type: none">65,500 cfs (19 Jun)65,500 cfs (18 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">2246 ft msl – 2250 ft msl Top of Spillway Gates <ul style="list-style-type: none">2250 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases have been stepped up to 65,000 cfs.Reservoir will use several feet of surcharge storage above the exclusive flood control pool as spillway gates are raised. Record Pool Elevation (Year) <ul style="list-style-type: none">2251.6 msl (1975) Record Flow (Year) <ul style="list-style-type: none">35,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none">65,000 cfs (Mid June)	Midnight Elevation <ul style="list-style-type: none">1853.9 ft msl24-hr Change (+0.0 ft) Daily Avg. Inflow <ul style="list-style-type: none">165,000 cfs (19 Jun)169,000 cfs (18 Jun) Daily Avg. Release <ul style="list-style-type: none">150,200 cfs (19 Jun)150,000 cfs (18 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1850 ft msl – 1854 ft msl Top of Spillway Gates <ul style="list-style-type: none">1854 ft msl River Stage (Bismarck) <ul style="list-style-type: none">18.81 (0715 CDT 20 Jun)Flood stage – 16 ft18.82 (0815 CDT 19 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases have been stepped up to 150,000 cfs.Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) <ul style="list-style-type: none">1854.8 msl (1975) Record Flow (Year) <ul style="list-style-type: none">65,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none">150,000 cfs (Mid June)	Midnight Elevation <ul style="list-style-type: none">1618.6 ft msl24-hr Change (+0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none">153,000 cfs (19 Jun)156,000 cfs (18 Jun) Daily Avg. Release <ul style="list-style-type: none">158,700 cfs (19 Jun)153,600 cfs (18 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1617 ft msl – 1620 ft msl Top of Spillway Gates <ul style="list-style-type: none">1620 ft msl River Stage (Pierre) <ul style="list-style-type: none">19.33 (0730 CDT 20 Jun)Flood stage – 15 ft19.11 (0830 CDT 19 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases will be stepped up to 160,000 cfs by mid June.Reservoir will peak within a foot of the top of the spillway gates at 1619 feet. Record Pool Elevation (Year) <ul style="list-style-type: none">1618.7 msl (1995) Record Flow (Year) <ul style="list-style-type: none">59,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none">160,000 cfs (Mid June)	Midnight Elevation <ul style="list-style-type: none">1419.4 ft msl24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none">156,000 cfs (19 Jun)150,000 cfs (18 Jun) Daily Avg. Release <ul style="list-style-type: none">158,800 cfs (19 Jun)153,000 cfs (18 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1422 ft msl – 1423 ft msl Top of Spillway Gates <ul style="list-style-type: none">1423 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases will be stepped up to 160,000 cfs by mid June.Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) <ul style="list-style-type: none">1422.1 msl (1991) Record Flow (Date) <ul style="list-style-type: none">74,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none">160,000 cfs (Mid June)	Midnight Elevation <ul style="list-style-type: none">1365.1 ft msl24-hr Change (+0.6 ft) Daily Avg. Inflow <ul style="list-style-type: none">171,000 cfs (19 Jun)158,000 cfs (18 Jun) Daily Avg. Release <ul style="list-style-type: none">143,600 cfs (19 Jun)143,600 cfs (18 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1365 ft msl – 1375 ft msl Top of Spillway Gates <ul style="list-style-type: none">1375 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases will be stepped up to 148,000 cfs by mid to late June. Record Pool Elevation (Year) <ul style="list-style-type: none">1372.2 msl (1997) Record Flow (Date) <ul style="list-style-type: none">67,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none">148,000 cfs (Mid to late June)	Midnight Elevation <ul style="list-style-type: none">1207.6 ft msl24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none">148,000 cfs (19 Jun)149,000 cfs (18 Jun) Daily Avg. Release <ul style="list-style-type: none">150,000 cfs (19 Jun)150,100 cfs (18 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1208 ft msl – 1210 ft msl Top of Spillway Gates <ul style="list-style-type: none">1210 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases have been stepped up to 150,000 cfs. Record Pool Elevation (Year) <ul style="list-style-type: none">1209.7 msl (2010) Record Flow (Date) <ul style="list-style-type: none">70,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none">150,000 cfs (Mid June)

Release and inflow figures include a + or - 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



US Army Corps
of Engineers •
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 20 Jun; 0900 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
<p>24-hr forecast (Glasgow, MT) Today: Slight chance of showers before 9am, then a chance of showers and t-storms after noon. Mostly sunny, with high near 75. North northeast wind 5 to 11 mph. Chance of precipitation is 30%.</p> <p>Tonight: 30% chance of showers and t-storms before midnight. Mostly cloudy, with a low around 54. North northeast wind 3 to 8 mph.</p> <p>Tuesday: Slight chance of showers, with t-storms also possible after noon. Partly sunny, with a high near 76. North northwest wind 5 to 13 mph. Chance of precipitation is 20%.</p> <p>24-hr forecast (Williston, ND) Today: Showers likely and possibly a t-storm. Cloudy, with high near 68. North wind 7 to 11 mph. Chance of precipitation is 70%.</p> <p>New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.</p> <p>Tonight: Chance of showers and t-storms, then showers likely after 1am. Cloudy, with a low around 54. North wind 5 to 9 mph. Chance of precipitation is 70%.</p> <p>New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.</p> <p>Tuesday: Showers likely and possibly a t-storm. Cloudy, with high near 65. North wind 5 to 11 mph. Chance of precipitation is 60%.</p> <p>New rainfall amounts 0.1 to 0.25 to 0.5 inch possible.</p> <p>24-hr forecast (Washburn, ND) Today: Showers with rain heavy at times. High near 65. East wind 3 to 11 mph. Chance of precipitation is 100%.</p> <p>New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tonight: Showers and possibly a t-storm before 1am, then a chance of showers. Some storms could produce heavy rainfall. Low around 58. East wind around 9 mph. Chance of precipitation is 80%.</p> <p>New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tuesday: Showers likely and possibly a t-storm. Cloudy, with a high near 65. East wind 8 to 14 mph, with gusts as high as 20 mph. Chance of precipitation is 60%.</p> <p>New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.</p>	<p>24-hr forecast (Riverdale, ND) Today: Showers with rain heavy at times. High near 66. East wind 3 to 10 mph. Chance of precipitation is 100%.</p> <p>New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tonight: Showers and possibly a t-storm before 1am, then a chance of showers. Some storms could produce heavy rainfall. Low around 58. East wind around 9 mph. Chance of precipitation is 80%.</p> <p>New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tuesday: Showers likely and possibly a t-storm. Cloudy, with a high near 65. North wind 23 to 29 mph, with gusts as high as 40 mph. Chance of precipitation is 70%.</p> <p>24-hr forecast (Ft. Pierre, SD) Today: Showers and t-storms. High near 69. North northeast wind 14 to 18 mph. Chance of precipitation is 90%.</p> <p>Tonight: Showers and t-storms. Low around 61. North northeast wind around 22 mph, with gusts as high as 31 mph. Chance of precipitation is 100%.</p> <p>Tuesday: Showers likely and possibly a t-storm. Cloudy, with a high near 65. North wind 17 to 26 mph, with gusts as high as 37 mph. Chance of precipitation is 70%.</p>	<p>24-hr forecast (Pierre, SD) Today: Showers and t-storms. High near 69. North northeast wind 14 to 18 mph. Chance of precipitation is 90%.</p> <p>Tonight: Showers and t-storms. Low around 61. North northeast wind around 22 mph, with gusts as high as 31 mph. Chance of precipitation is 100%.</p> <p>Tuesday: Showers likely and possibly a t-storm. Cloudy, with a high near 65. North wind 17 to 26 mph, with gusts as high as 37 mph. Chance of precipitation is 70%.</p>	<p>24-hr forecast (Lower Brule, SD) Today: Showers and t-storms. High near 73. North northeast wind 15 to 21 mph. Chance of precipitation is 90%.</p> <p>Tonight: Showers and t-storms. Low around 61. North northeast wind to 21 mph. Chance of precipitation is 100%.</p> <p>Tuesday: Showers likely and possibly a t-storm. Cloudy, with a high near 65. North wind 17 to 26 mph, with gusts as high as 37 mph. Chance of precipitation is 70%.</p>	<p>24-hr forecast (Chamberlain, SD) Today: Showers and t-storms. Some storms could produce heavy rain. High near 73. North northeast wind 13 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 80%.</p> <p>New rainfall amounts 0.5 to 0.75 inch possible.</p> <p>Tonight: Showers and t-storms. Some storms could produce heavy rain. Low around 61. North northeast wind 13 to 20 mph, with gusts as high as 28 mph. Chance of precipitation is 100%.</p> <p>New rainfall amounts 1 to 2 inches possible.</p> <p>Tuesday: Showers and t-storms. Some storms could produce heavy rain. High near 66. North northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 80%.</p> <p>New rainfall amounts 0.25 to 0.5 inch possible.</p>	<p>24-hr forecast (Yankton, SD) Today: Showers and t-storms likely, mainly after 4pm. Some storms could produce heavy rain. Partly sunny, with high near 82. East wind 14 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 70%.</p> <p>New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.</p> <p>Tonight: Showers and t-storms. Some storms could produce heavy rain. Low around 65. East northeast wind 9 to 15 mph. Chance of precipitation is 80%.</p> <p>New rainfall amounts 0.75 to 1 inch possible.</p> <p>Tuesday: Showers and t-storms likely. Some storms could produce heavy rain. Cloudy, with a high near 69. North wind 9 to 17 mph, with gusts as high as 25 mph. Chance of precipitation is 70%.</p> <p>New rainfall amounts 0.5 to 0.75 inch possible.</p> <p>24-hr forecast (Sioux City, IA) Today: Showers and t-storms likely, mainly after 4pm. Some storms could produce heavy rain. Partly sunny, with high near 86. East wind 13 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 60%.</p> <p>New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.</p> <p>Tonight: Showers and t-storms likely. Some storms could produce heavy rain. Mostly cloudy, with low around 67. East southeast wind 8 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 70%.</p> <p>New rainfall amounts 0.5 to 0.75 inch possible.</p>

Source of information: <http://www.weather.gov>



Missouri River Mainstem 24-Hour Forecast Conditions (Updated 20 Jun; 0900 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
<p>24-hr forecast (Bismarck/Mandan, ND) Today: Showers with rain heavy at times. High near 66. East wind 5 to 11 mph. Chance of precipitation is 100%. New rainfall amounts between 0.25 to 0.5 inch possible.</p> <p>Tonight: Showers and a possible t-storm. Some storms could produce heavy rainfall. Low around 58. East wind 8 to 10 mph. Chance of precipitation is 80%. New rainfall amounts between 0.25 to 0.5 inch possible.</p> <p>Tuesday: Showers and a possible t-storm. Some storms could produce heavy rainfall. High near 62. Northeast wind 10 to 18 mph, with gusts as high as 25 mph. Chance of precipitation is 80%. New rainfall amounts between 0.25 to 0.5 inch possible.</p>	<p>24-hr forecast (Omaha, NE) Today: 20% chance of showers and t-storms after 4pm. Some storms could be severe, with large hail and damaging winds. Mostly sunny, with high near 86. South southeast wind around 17 mph, with gusts as high as 26 mph.</p> <p>Tonight: Showers and t-storms likely, mainly between 7pm and 1am. Some storms could be severe, with large hail and damaging winds. Mostly cloudy, with low around 66. South wind 10 to 20 mph, with gusts as high as 28 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.</p> <p>Tuesday: Chance of showers, with t-storms possible after 1pm. Mostly cloudy, with high near 75. West southwest wind 13 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 50%. New rainfall amounts of 0.1 inch, higher amounts possible in t-storms.</p>				

Source of information: <http://www.weather.gov/>
Internet: <http://www.nwo.usace.army.mil>
Facebook: <http://www.facebook.com/OmahaUSACE>
Twitter: <http://www.twitter.com/OmahaUSACE>
YouTube: <http://www.youtube.com/OmahaUSACE>
Flickr: <http://www.flickr.com/photos/omahausace>



Missouri River Flooding (Logistics) (Updated 20 Jun; 0900 CDT)

Personnel Deployed	
7 (Glasgow, MT) 1 (Garrison, ND) 4 (Bismarck, ND) 1 (Fort Yates, ND) 6 (Williston, ND)	5 (Pierre, SD) 1 (Kansas City, MO) 3 (Sioux City, IA) 1 (S. Sioux City, NE) 1 (Onawa, IA)
	16 (Missouri River Survey – 7 teams) 1 (Lincoln, NE) 1 (Offutt, NE) 4 (North Platte, NE) 5 (Hamburg, IA)

Equipment Deployed	
HESCO (3' and 4') Issued: 74,270 LF On Hand: 30,950 LF Projected Outstanding Requirements: 35,000 LF	Slingbags On Hand: 1,350 slingbags (2K lbs each)
Sandbags Issued: 14,637,000 On Hand: 6,923,500 Projected Outstanding Requirements: 6.5 M	Heavybags On Hand: 6,420 heavybags (35x35x35 each)
Poly Rolls Issued: 2,836 rolls On Hand: 1,987 rolls Projected Outstanding Requirements: 1,500 rolls	Geotextile On Hand: 4 rolls (16' wide; 500 sq ft)
Pumps Issued: 48 pumps On Hand: 4 pumps (3 – serviceable) Projected Outstanding Requirements: 20 pumps	Additional Supplies due in: 1 pump waiting on PTO shaft HESCO: 4,750 LF

[REDACTED] NWO

From: Farmer, Monique L NWO
Sent: Monday, June 20, 2011 10:26 AM
To: Farhat, Jody S NWD02
Subject: Fw: MO River (UNCLASSIFIED)

----- Original Message -----

From: [REDACTED] MVD
To: [REDACTED] NWD
Cc: [REDACTED] NWK; Farmer, Monique L NWO
Sent: Mon Jun 20 08:03:42 2011
Subject: FW: MO River (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

For you guys.....sorry!

[REDACTED]
Mississippi Valley Division
Public Affairs Office
phone: [REDACTED]
fax: [REDACTED]

-----Original Message-----

From: Cemvd-pa
Sent: Monday, June 20, 2011 10:00 AM
To: [REDACTED] MVD; [REDACTED] MVD
Subject: FW: MO River

From: John Wayne[SMT] [REDACTED]
Sent: Monday, June 20, 2011 9:59:18 AM
To: Cemvd-pa; Cemvd-pa
Subject: MO River
Auto forwarded by a Rule

Hello,

I am writing to express my concern in regards to the management of the MO River. Since the flood of 1993, the river has been managed differently. Since 1993, rock dikes/sandbars have hardly been seen. Levees have also been on overtime since 1993. Why? Could it be a drastic climate change. Probably not. I believe special interest groups and recreation have taken the forefront ahead of flood control management.

It's a sad day when we destroy homes/property and people's lives for a sturgeon fish or so somebody can have some fun on a lake. I hope you all still have a heart and can change the way things are done. Let's put flood control back as priority number 1.

Oh, and did you notice the last two characters of my email address are 93? Something that is easy to remember.

Thanks,

J. R. Zach

Classification: UNCLASSIFIED

Caveats: NONE

NWO

From: [REDACTED] NWK
Sent: Monday, June 20, 2011 10:01 AM
To: [REDACTED] NWK; [REDACTED] 1LT NWK; [REDACTED] W NWK; [REDACTED]
[REDACTED] NWK; Farhat, Jody S NWD02; Thomas, Kimberly S NWO; [REDACTED] NWK;
[REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK;
[REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK;
W NWK; [REDACTED] F NWK; [REDACTED] J NWK; [REDACTED] J NWK; DLL-NWK-
CMT; [REDACTED] D NWK; [REDACTED] A NWK; [REDACTED] C NWK; [REDACTED]
[REDACTED] NWK; Blechinger, Erik T NWO; [REDACTED] NWK NWD; [REDACTED] Col NWD;
CENWO-EOC NWO; [REDACTED] J NWK; [REDACTED]@noaa.gov; [REDACTED]
NWK; [REDACTED] D NWK; [REDACTED] M NWK
Cc: CENWD-EOC NWD; [REDACTED] LTC NWW; [REDACTED]@noaa.gov;
[REDACTED]@noaa.gov; [REDACTED]@noaa.gov; DLL-NWK-EOC-BC; [REDACTED]
MVS; [REDACTED] MVS
Subject: RE: MRFLOOD - 20 Jun 1400hrs Daily CMT -- Brief of Flood Fight (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

A CMT Briefing will be held at 1400 today for the Flood Fight.

Please note that the Joplin Tornado Response will no longer be briefed in the same meeting as the Missouri River Flood brief.

For clarification you will need to log in to the webmeeting to view the slides, and then call in to the conference call to hear the discussion:

WebMeeting Information:
<https://webmeeting.att.com>

Meeting Number: [REDACTED]
Code: [REDACTED]
You will be a Participant.

Call-In Number
[REDACTED]
Access code: [REDACTED]
Security Code: [REDACTED]

[REDACTED]
PM-CJ
Kansas City District
U.S. Army Corps of Engineers

Cell: [REDACTED]
[REDACTED]@usace.army.mil
My PMP DOCs available to KC District at:
P:\PM-C\PMP\LINKS TO WOLF PROJECT PMPs

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: Ruch, Robert J COL NWO
Sent: Monday, June 20, 2011 9:44 AM
To: [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S NWD02
Subject: RE: Oahe Releases (UNCLASSIFIED)

How does a 5000k cfs back off impact internal drainage?

-----Original Message-----

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 9:11 AM
To: Ruch, Robert J COL NWO; [REDACTED] NWO
Subject: FW: Oahe Releases (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

FYI

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[REDACTED]@usace.army.mil

-----Original Message-----

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 8:45 AM
To: Farhat, Jody S NWD02
Subject: Oahe Releases (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Jody,

Oahe is requesting that RCC consider reducing flows from Oahe by 5kcfs for today and tomorrow due to the significant rainfall and interior drainage issues the cities are facing.

Thanks,
[REDACTED]

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[REDACTED]@usace.army.mil

Classification: UNCLASSIFIED
Caveats: FOUO

Classification: UNCLASSIFIED
Caveats: FOUO

[REDACTED] NWO

From: [REDACTED] NWK
Sent: Monday, June 20, 2011 9:07 AM
Subject: 20 June 2011 Boat Report 11171
Attachments: BoatReportDaily11171.pdf; Daily Gage 0620.pdf

Attached is the Boat Report for 20 June 2011 #11171.

Thank you,

[REDACTED]
US Army Corps of Engineers
MO River Area Office
Napoleon, MO 64074
[REDACTED]

Check us out on Facebook!
www.facebook.com/MORiverNavigation

MISSOURI RIVER BARGE TRAFFIC

REPORT#: 11171							DATE: 20 JUNE 2011
BOAT NAME	RIVER MILE	UP DN	DEST	LOADS	EMPTY	DRAFT	REMARKS
JEFFERSON CITY RIVER TERMINAL							
ALLISON MARIE	228						Stand By
LESLIE ANN	143						Stand by
JAMIE LEIGH	143		0		3		Planning to head down 6/21 w/ 3 empties
TARKIO	143						Working, tending to dredge Ray Marie
HALLE KATE	143						Stand by
MARGE I	143						Working, tending to dredge Kathy Lee
MAGNOLIA MARINE							
JENNIE DEHMER							Off MOR
LINDA TAYLOR							Off MOR
LESLIE B							Off MOR
RIVER MARINE ENTERPRISES LLC							
MARY LYNN							Off MOR
HERMANN SAND & GRAVEL							
KATHRYN ANN	97						Stand By
MEL SUE	97						Stand By
W. A. ELLIS CONSTRUCTION							
DAISY BELL	233	UP DN	219				Placing rock in area of rm 233
JOHANNE	219	UP DN	233				Loading rock at rm 219
WESTERN CONTRACTING							
EXPEDITION	661						Stand by
CAPT. JOE	661						Stand by
CORPS OF ENGINEERS							
BRANDY FITZHUGH	627						Stand by
MISSOURI	627						Stand by
JUMBO	104.5						Stand by
STEPHENSON	104.5						Stand by
STEPHENSON II	104.5						Stand by
CLEM MEYER II							Off MOR
COAST GUARD							
CHEYENNE							Off MOR
GASCONADE							Homeport

RIVER MILES AND STAGES FOR HIGH WATER LEVEE CONCERNS

River Mile	Station	Stage in Feet
278.2 - 278.3	Waverly	21
298.3 - 298.6	Waverly	21
298.3 - 300.2	Waverly	21
302.2 - 302.5	Waverly	21
367.0 - 367.5	Kansas City	17
418.2 - 428.0	Atchison	20
428.0 - 437.3	St. Joseph	22
441.7 - 456.5	St Joseph	17

River Mile	Station	Stage in Feet
465.5 - 470.5	St Joseph	19
473.5 - 476.0	St Joseph	19
476.0 - 482.5	St Joseph	19
492.5 - 493.6	Rulo	20
493.6 - 494.0	Rulo	20
498.9 - 499.0	Rulo	20
501.9 - 502.0	Rulo	20
506.5 - 507.1	Rulo	20

Kansas City District, Corps of Engineers Water Management Section RADIO ROOM DAILY GAGES

STATION	RIVER MILE	DATUM (ft msl)	FLOOD STAGE (ft)	DATE TIME GMT	STAGE (ft)	6HR CHG (ft)	24HR CHG (ft)
Missouri River							
Sioux City	732.3	1057.0	30	20JUN2011 12:00	33.64	0.02	0.14
Omaha	615.9	948.2	29	20JUN2011 12:00	33.55	-0.07	0.35
Nebraska City	562.6	905.4	18	20JUN2011 12:30	26.50	0.03	0.31
Rulo	498.0	837.2	17	20JUN2011 12:30	25.71	0.24	0.47
St. Joseph	448.2	788.2	17	20JUN2011 12:30	23.99	0.10	-0.02
Kansas City							
Kansas City	366.1	706.4	32	20JUN2011 12:30	26.37	-0.18	-0.18
Napoleon	328.7	680.2	17	20JUN2011 12:30	22.21	-0.18	0.05
Waverly	293.4	646.0	20	20JUN2011 12:30	24.71	-0.33	0.29
Glasgow	226.3	586.1	25	20JUN2011 12:30	26.14	0.08	0.29
Boonville	197.1	565.4	21	20JUN2011 12:30	21.72	-0.05	0.30
Jefferson City							
Jefferson City	143.9	520.1	23	20JUN2011 12:00	21.41	-0.11	0.05
Hermann	97.9	481.6	21	20JUN2011 12:30	21.73	0.04	0.24
St. Charles	28.2	413.6	25	20JUN2011 12:00	24.84	0.01	0.20
St. Louis-Missi R.	0.0	379.9	30	20JUN2011 12:00	33.75	0.08	0.21

STATION	RIVER MILE	DATUM (ft msl)	FLOOD STAGE (ft)	DATE TIME	STAGE (ft)	6HR CHG (ft)	24HR CHG (ft)
Gasconade River							
Jerome			15	20JUN2011 11:45	3.43	-0.13	-1.28
Rich Fountain			20	20JUN2011 12:30	5.64	-0.82	0.63
Osage River							
St. Thomas			23	20JUN2011 11:45	7.38	-0.36	-1.35
Grand River							
Chillicothe	60.1	658.7	24	20JUN2011 11:45	6.06	-0.13	-0.09
Sumner	36.0	631.2	26	20JUN2011 11:45	11.65	0.06	-0.13

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 8:45 AM
To: Farhat, Jody S NWD02
Subject: Oahe Releases (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Jody,

Oahe is requesting that RCC consider reducing flows from Oahe by 5kcf for today and tomorrow due to the significant rainfall and interior drainage issues the cities are facing.

Thanks,

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[\[REDACTED\]@usace.army.mil](mailto:[REDACTED]@usace.army.mil)

Classification: UNCLASSIFIED
Caveats: FOUO

NWO

From: [REDACTED] NWD02
Sent: Monday, June 20, 2011 8:44 AM
To: [REDACTED] NWD02; CENWO-EOC NWO; [REDACTED] NWO; [REDACTED] MVR; [REDACTED] WO
Cc: [REDACTED] WO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S
NWD02; [REDACTED] Jr NWO
Subject: RE: Mainstem data for NWO sitrep 6/209/11 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Note. Correction. Just found out Ft. Peck inflows are 51,000 not 56,000.

-----Original Message-----

From: [REDACTED] C NWD02
Sent: Monday, June 20, 2011 8:37 AM
To: [REDACTED] NWD02; CENWO-EOC NWO; [REDACTED] NWO; [REDACTED] MVR; [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S
NWD02; [REDACTED] NWO
Subject: RE: Mainstem data for NWO sitrep 6/209/11 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Notes for data below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

Fort Peck Dam (MT)

6/19 Pool Elev: 2252.0 ft-msl

24-hr change: -0.1'

6/19 Ave Inflow: 56,000 cfs

6/19 Ave Release: 65,500 cfs

6/20 Scheduled Release: 60,000 cfs

Garrison Dam (ND)

6/19 Pool Elev: 1853.9 ft-msl

24-hr change: 0.0'

6/19 Ave Inflow: 165,000 cfs

6/19 Ave Release: 150,200 cfs

6/20 Scheduled Release: 150,000 cfs

Oahe Dam (SD)

6/19 Pool Elev: 1618.6 ft-msl

24-hr change: 0.1'

6/19 Ave Inflow: 153,000 cfs

6/19 Ave Release: 158,700 cfs

6/20 Scheduled Release: 160,000 cfs

Big Bend Dam (SD)

6/19 Pool Elev: 1419.4 ft-msl

24-hr change: -0.1'

6/19 Ave Inflow: 156,000 cfs

6/19 Ave Release: 158,800 cfs

6/20 Scheduled Release: 160,000 cfs

Fort Randall Dam (SD)

6/19 Pool Elev: 1365.1 ft-msl

24-hr change: 0.6'

6/19 Ave Inflow: 171,000 cfs

6/19 Ave Release: 143,600 cfs

6/20 Scheduled Release: 143,000 cfs

Gavins Point Dam (NE-SD)

6/19 Pool Elev: 1207.6 ft-msl

24-hr change: -0.1'

6/19 Ave Inflow: 148,000 cfs

6/19 Ave Release: 150,000 cfs

6/20 Scheduled Release: 150,000 cfs

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Monday, June 20, 2011 8:17 AM
To: Farhat, Jody S NWD02; 'cedarem@hartel.net'
Subject: RE: Gavin's Point Dam (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED]

At this time we would not anticipate development of new inundation maps if the discharges from Gavins Point were to go to 160,000. An increase of 10,000 cfs would result in less than a foot increase at the gages downstream of Omaha. Due to the coarseness of our terrain model, the changes in inundation area would be very small. We will be updating our models so that we can provide elevation changes at areas of concern.

[REDACTED]

-----Original Message-----
From: Farhat, Jody S NWD02
Sent: Sunday, June 19, 2011 11:42 AM
To: cedarem@hartel.net
Cc: [REDACTED] NWO
Subject: RE: Gavin's Point Dam (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] - At the present time we do not anticipate increasing releases beyond 150,000 cfs. I have cc'd [REDACTED], Chief of Hydrologic Engineering for the Omaha District, and believe he could tell you what the inundation mapping is based on and potential impacts of higher flows either from the tributaries or reservoir releases.

Jody

-----Original Message-----
From: [REDACTED] [mailto:cedarem@hartel.net]
Sent: Friday, June 17, 2011 6:08 PM
To: Farhat, Jody S NWD02
Subject: Gavin's Point Dam

Jody,

In listening to the call today I understand that there is the probability that releases from Gavin's may need to increase down the road if mother nature keeps up the moisture. We have kind of figured from day one that may become necessary.

I know this is like hitting a moving target, but for our Emergency Planning purposes what ranges might be possible? What ranges do we need to plan for?

Also, will we be able to get new inundation information that covers the range far enough in advance so that we can get word out to the affected citizens before the media does?

The USACE teams working this event have a tough job that few understand. Keep up the good work.

Thanks

Kevin Garvin

Director of Emergency Management

Cedar County Nebraska

402-254-6862 Office

402-640-4650 Cell

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

NWO

From: Hogg, Jerry F [JHogg@ameren.com]
Sent: Monday, June 20, 2011 7:56 AM
To: Accu-Weather; [REDACTED] NWK; [REDACTED] NWD02; Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED]; 'Holtz, Jerry'; [REDACTED] MVS; Kaffenberger, Glenn; DLL-NWK-ED-HC; [REDACTED] NWD02; 'Lobb, Del'; Larry Murphy; NOAA National Weather Service; [REDACTED] - USACE; Parker, Ed; Steve Spaulding; [REDACTED] NWD02; Sullivan, Alan D; [REDACTED] NWD02; Thompson, Phil M; Weather Service Springfield; Witt, Warren A; [REDACTED]@fws.gov'; [REDACTED]@fws.gov'
Subject: LOZ Lake Data 2011 yearly form.xls
Attachments: LOZ Lake Data 2011 yearly form.xls

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F NWO

From: [REDACTED] NWD
Sent: Monday, June 20, 2011 7:41 AM
To: McMahon, John R BG NWD; Tipton, [REDACTED] I NWD; [REDACTED] NWD; [REDACTED]
[REDACTED] COL NWP; Ruch, Robert J COL NWO; [REDACTED] COL NWS; [REDACTED]
[REDACTED] OL NWK; [REDACTED] LTC NWW; [REDACTED] E LTC NWS; Jordano,
James J LTC NWO; [REDACTED] LTC NWP; [REDACTED] MAJ NWK; [REDACTED]
B LTC NWW; Cenwk-EOC NWK; CENWO-EOC NWO; CENWS-EOC NWS; CENWW-EOC
NWW; CENWP-EOC NWP; [REDACTED] NWD; Anderson, G Witt NWD
Cc: [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD;
[REDACTED] NWD; [REDACTED] K NWD; [REDACTED] NWD; [REDACTED] NWD;
[REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD;
N NWD; [REDACTED] Farhat, Jody S NWD02; [REDACTED] NWD; [REDACTED]
NWD; [REDACTED] MAJ NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED]
[REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED]
[REDACTED] NWP; [REDACTED] @ POD; [REDACTED] NWD; Rychlik,
Dean L; [REDACTED] BSG CONTRACTOR @ NWD; [REDACTED] SAW; [REDACTED]
NWD
Subject: FEMA National Situation Report for June 20, 2011 (UNCLASSIFIED)
Attachments: 2011june20fema_natl_sitrep.pdf

Classification: UNCLASSIFIED
Caveats: NONE

Sir,

The operational reports and summary related to flooding and our support to FEMA will be issued in the RCO Evening Report. Only items reported in the Daily FEMA National SITREP are presented.

From FEMA Report (attached):

Missouri River Basin Flooding Summary:

An active weather pattern is expected to continue across the region over the next couple of days. Additional precipitation, more than an inch in some areas is forecast today. Additional severe weather will be possible through tonight. Most common threats with these storms are large hail and damaging winds; however, an isolated tornado cannot be ruled out.

Evacuations have taken place in McKissick Island, Corning, Big Lake, Fortesque and Craig in Holt County, MO. Individuals along the Nodaway and Missouri Rivers are evacuating in Andrew County, MO.

A levee breach due to overtopping occurred on the Holt County #10 (non-federal) levee in Missouri on overnight, June 18-19, 2011, causing closure of Highway US-159 between Missouri and Nebraska due to water over the roadway. Evacuations are underway in the Big Lake area.

On June 19, 2011, the Unit L-550, a federal levee overtopped about 6 inches on a 300 yard stretch of the levee in Atchison County, along the Missouri River in Missouri. The levee located about ¼ mile north of U.S. Highway 136, north of Phelps City, MO., is rapidly eroding. Officials are evaluating what response is needed in this area. Over 360 residents in the towns of Phelps City and Watson, MO., could potentially be impacted. Current efforts are focused on evacuation and road closures as they brace for imminent failure of this levee.

In Atchison County along the Nishnabotna River in SW Iowa, there is a levee (non-federal) breach currently affects agricultural land. This breach is on the north side of the Nishnabotna River and will add to the water that is impacting Hamburg, Iowa.

The US Coast Guard has closed the Missouri River to all vessels from Mile Marker 450 near St. Joseph, to Mile Marker 811 near Gavins Point Dam in Yankton, SD. Nearly a 100 mile stretch of the Missouri River is affected.

USACE Dam Releases:

Releases from the Garrison Reservoirs are at 140,200 cfs and are projected to rise to 150,000 cfs.

Releases from the Fort Randall Reservoir are at 143,100 cfs and are projected to remain at 143,000 cfs, with the schedule dependent on the Gavins Point pool level.

Releases from the Fort Peck Reservoir are at 65,900 cfs and are projected to remain at 65,000 cfs.

Releases from the Oahe Reservoir are at 150,400 cfs and are projected to rise to 160,000 cfs.

Releases from the Big Bend Reservoir are at 148,400 cfs and are projected to rise to at 160,000 cfs.

Releases from the Gavins Point Reservoir are at 150,100 cfs and are projected to remain at 150,000 cfs.

Peak reservoir releases are expected to continue well into August.

Lincoln County, NE, has had 150 to 200 homes evacuated with several homes reporting minor damages. Several city and county roads are closed including Highway 30 east of the North Platte Airport.

Significant National Weather:

Midwest: A low pressure system over the Central Plains will produce widespread precipitation across the Central and Northern Plains, Great Lakes and Southwest into Central Texas. The system is expected to produce severe thunderstorms including damaging wind gusts, large hail and tornadoes from the Central Plains to the Ohio Valley. Heavy precipitation (1-2 inches) associated with the thunderstorms will produce localized Flash Flooding. Strong west to northwest winds of 30 to 40 mph with gusts up to 50 mph are expected behind the deepening system.

West: An upper level trough over the Rockies will produce showers and thunderstorms from Montana to Colorado. Some areas could receive as much as an inch of precipitation.

v/r

[REDACTED]

Classification: UNCLASSIFIED

Caveats: NONE



FEMA

National Situation Report

As of 5:30 a.m. (EDT) Monday, June 20, 2011

This information is provided as a public service. Information presented is considered public information and may be distributed or copied. Use of appropriate byline/photo/image credits is requested. Published daily by the FEMA National Watch Center (NWC). Available on the internet at: <http://www.fema.gov/emergency/reports/index.shtm>. For questions or comments, contact the NWC (staffed 24 hours a day, 7 days a week) at 202-646-2828 or fema-nwc@dhs.gov.

Significant National Weather

West

An upper level trough over the Rockies will produce showers and thunderstorms from Montana to Colorado. Some areas could receive as much as an inch of precipitation. Gusty winds, low relative humidity and long term drought will produce high fire danger across the Southwest and critical fire weather in New Mexico.

Midwest:

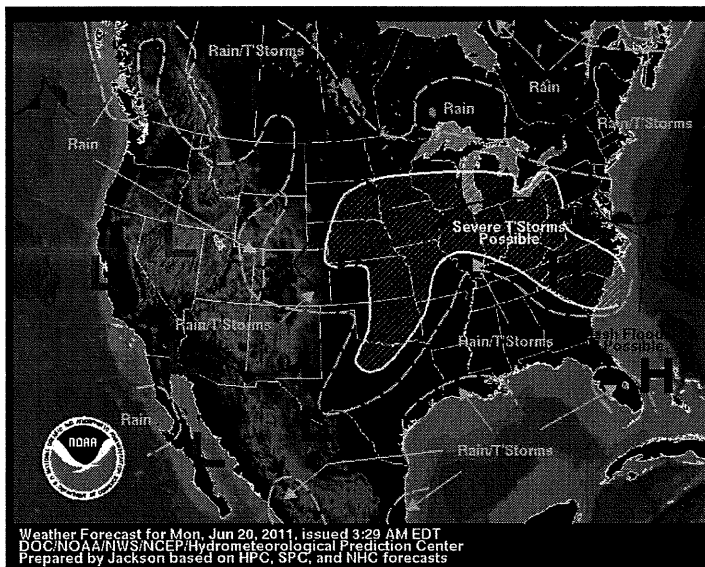
A low pressure system over the Central Plains will produce widespread precipitation across the Central and Northern Plains, Great Lakes and Southwest into Central Texas. The system is expected to produce severe thunderstorms including damaging wind gusts, large hail and tornadoes from the Central Plains to the Ohio Valley. Heavy precipitation (1-2 inches) associated with the thunderstorms will produce localized Flash Flooding. Strong west to northwest winds of 30 to 40 mph with gusts up to 50 mph are expected behind the deepening system. The system will shift eastward into the Great Lakes and Ohio Valley tomorrow.

South:

The region will be generally hot and dry. Precipitation will be limited to showers, thunderstorms and even severe thunderstorms in Texas, Oklahoma, eastern Tennessee, the Carolinas and southern Florida. Much of the Southeast will have unseasonably hot temperatures with many areas in excess of 100 and additional records may be broken. Gusty winds, low relative humidity and long term drought will produce high fire danger across the Southern Plains and critical fire weather in Texas, Oklahoma and Kansas. Tomorrow the system moving out of the Midwest will produce severe thunderstorms in the southern Plains and Lower Mississippi Valley.

Northeast:

A frontal system extending from the system in the Midwest remains stalled over the Mid-Atlantic. Expect showers, thunderstorms and severe thunderstorms across much of the Mid-Atlantic. Some areas could see more than an inch of precipitation. A weak high pressure will keep New York and New England dry. (NOAA, NWS and various media sources)



Missouri River Basin Flooding Summary

An active weather pattern is expected to continue across the region over the next couple of days. Additional precipitation, more than an inch in some areas is forecast today. Additional severe weather will be possible through tonight. Most common threats with these storms are large hail and damaging winds; however, an isolated tornado cannot be ruled out.

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Peak reservoir releases are expected to continue well into August.

Lincoln County, NE, has had 150 to 200 homes evacuated with several homes reporting minor damages. Several city and county roads are closed including Highway 30 east of the North Platte Airport. (USACE)

Federal and State Response

FEMA Region VII

RRCC at Level III (Monitoring); RWC is operational 24/7

State Liaison teams have been deployed to KS, IA, and MO. An enhanced State Liaison Team is located at the SEOC in NE.

Region VII LNOs deployed to KS, MO and IA

IA SEOC is activated at Level II (limited staff in the EOC).

KS EOC is activated at a Watch Level.

NE SEOC is activated at Level III (Full Activation – Mon-Fri; Duty Officer only on Sat/Sun)

MO SEOC at Level II (Partial Activation). (FEMA Region VII)

FEMA Region VIII

RRCC at Level III

Regional IMAT teams deployed to MT, SD, and ND.

2 LNOs deployed to WY

SD SEOC at Level 1 (Full Activation); MT, ND, WY, UT EOCs - partially activated; CO SEOC – not activated (*FEMA Region VIII*)

National Fire Activity

Sunday, June 19, 2011:

- National Preparedness Level: 3
- Initial attack activity: Light (153 new fires)
- New Large Fires: 6
- Large Fires Contained: 3
- Uncontained Large Fires: 36
- Type 1 IMT Committed: 6
- Type 2 IMT Committed: 10
- States affected: AZ, NM, GA, NC, FL, OK, UT, TX, MS, AK & CO. (*NIFC*)

Wildfires

Arizona and New Mexico

Wallow Fire – FEMA 2915-FM-AZ (Apache, Navajo, Graham & Greenlee Counties); FEMA-2917-FM-NM (Catron County)

The fire has consumed 511,118 acres (increased by 10,709 acres) and is 51% contained.

Three Type 1 IMTs remain assigned to the fire.

Approximately 2,714 homes, 473 commercial properties, 1,216 outbuildings are threatened

32 homes, 4 commercial properties and 36 outbuildings were destroyed.

Five homes and 1 outbuilding have been damaged.

12 injuries have been reported.

Fire is reported to have jumped its containment lines and is burning towards Luna, NM (Catron County), six miles from the Arizona border.

Evacuations remain in effect in Sunrise, Greer, and Blue River, AZ. A precautionary evacuation is in effect for Luna, NM.

A pre-evacuation alert remain in effect in Apache County, AZ for Greens Peak, Hidden Meadows Lodge and the surrounding areas.

Multiple highways and road closures in the fire area.

Monument Fire – FEMA-2919-FM-AZ (Cochise County, AZ)

The fire is located within 5 miles of Sierra Vista (Pop. 3,700) and has consumed 26,956 acres, 27% containment.

Approximately 95 homes and 25 outbuildings are threatened, 50 residences have been damaged or destroyed and 2 outbuildings have been destroyed.

Evacuations continue for Sierra Vista, Ramsey, Miller Canyon, Hunter Canyon, Lower Stump Canyon, Ash Canyon, and Nicksville, AZ.

A pre-evacuation order is in effect for the area north of Sierra Vista, AZ.

Three shelters are open with no occupants.

Horseshoe 2 Fire – FEMA-2907-FM-AZ (Cochise County, NM)

The fire has consumed 213,511 acres (increase of 3,200 acres) and is 80% contained (increase of 5%). Full containment is expected on June 22.

Nine residences and 14 structures have been damaged or destroyed.

No updates are available for evacuations.

Track Fire - FEMA-2918-FM-NM (Colfax County, NM)

The fire has consumed 27,792 acres (increase of 652 acres) with 80% containment (increase of 45%); Full containment is expected on June 27.

Seven structures have been destroyed; 300 are threatened.

No updates are available for evacuations.

Two injuries reported

Alaska

East Volkmar Fire

The fire is located approximately 25 miles east-northeast of Delta Junction.

The fire has consumed 58,059 acres (increase of 9 acres) with 28% containment (increase of 2%).

No structures are threatened. The incident command will release all resources and monitor the fire by air. There will be no further reporting from the state unless significant activity occurs.

Hasting Fire

Located on State land burning approximately 15 miles Northwest of Fairbanks.

The fire has consumed 22,819 acres with 61% containment; expected containment unknown.

A Temporary Flight Restriction (TFR) is still in place for pilots operating in the Fairbanks in the airspace surrounding the Hastings Fire.

Colorado

Duckett Fire – FEMA-2923-FM-CO (Westcliffe, CO)

The fire has consumed 4,353 acres (increase of 5 acres) and is 55% contained.

Several structures are threatened; 200 structures remain within 2 miles of the fire border.

Evacuations remain in effect for the Eagle Peak Subdivision, Rainbow Trail Lutheran Camp, County Rd 192, Brush Creek subdivision, Maytag Ranch and other scattered structures.

A Type II IMT is assigned to this fire.

Georgia

Honey Prairie Complex Fires – FEMA-2920-FM-GA (Racepond, Honey Prairie, Paxton Road and Durdin Prairie Fires)

Fires are burning near the Okefenokee National Wildlife Refuge, 5 mi NE of Fargo, GA.

The fire has consumed 233,606 acres (increase of 2,588 acres) with 60% or less percent containment.

Sweat Farm Again Fire – FEMA-2921-FM-GA

5,000 acres burned, with 30% containment. Full containment expected June 25, 2011.

No updates are available for evacuations or damage. (INCIWEB)

Federal and State Response

FEMA Region IV

RRCC is not activated

Texas SEOC is activated to Level II (Escalated Response due to wildfire activity). (FEMA Region IV)

FEMA Region VI

RRCC is not activated

Region VI LNO is available to deploy, if needed. (FEMA Region VI)

FEMA Region VIII

RRCC is activated to Level III

Colorado SEOC is not activated. (*FEMA Region VII*)

FEMA Region IX

RRCC is not activated

Region IX IMAT (Type III): 2 Available

Region IX personnel deployed to:

AZ SEOC (3 LNOs and 1 GIS Specialist)

GACC SWCC (1 LNO)

2 Regional IMATs available

Arizona State EOC is fully activated (*FEMA Region IX*)

FEMA Region X

RRCC is not activated

Alaska State EOC is at Preparedness Level 1 (*FEMA Region X*)

Fire Management Assistance Grant (FMAG)

Texas:

McDonald 2 Fire

An FMAG was approved on June 20, 2011, for the McDonald 2 Fire in Clay County, TX. At the time of the FMAG approval, the fire had burned 5,000 acres. 500 persons had been evacuated and 1,300 homes were threatened. Two shelters are open.

Cowboy Church Fire

An FMAG was approved on June 20, 2011 for the Cowboy Church Fire in Walker County and Madison County, TX. At the time of the FMAG approval, the fire had burned 1,000 acres in Walker County and crossed into Madison County. About 700-800 homes in surrounding unincorporated areas are affected. 1450 residents have been evacuated.

Dyre Mill Fire

An FMAG was approved on June 20, 2011 for the Dyre Mill Fire in Grimes County, TC. At the time of the FMAG approval, the fire had burned 1,000 acres. 250 residents were evacuated. 30 homes had been destroyed in the Mill Stone Subdivision. (*FEMA Region VI*)

Earthquake Activity

No significant activity. (*USGS*)

Tropical Activity

Atlantic / Caribbean / Gulf of Mexico

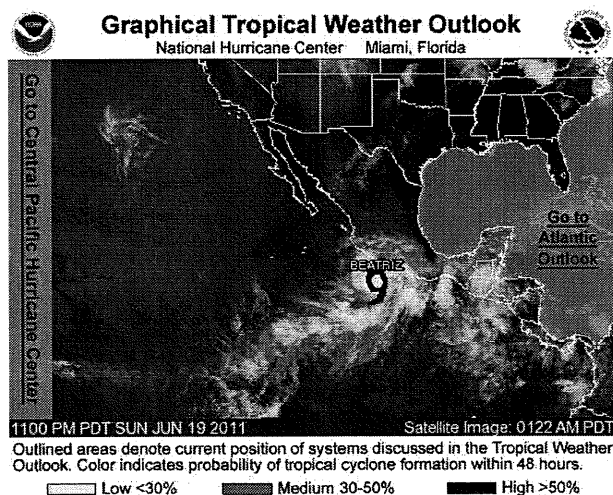
No activity expected within the next 48 hours.

Eastern / Central Pacific

The National Hurricane Center is issuing advisories on Tropical Storm (TS) Beatriz, located about 205 miles south of Zihuatanejo, Mexico. Based on the current forecast TS Beatriz is forecast to move in a north-northwesterly track. Based on the current warning TS Beatriz will not affect the U.S.

Western / South Pacific:

No activity affecting U.S. territories. (*NOAA, NWS, NHC, CPHC JTWC*)



Declaration Activity

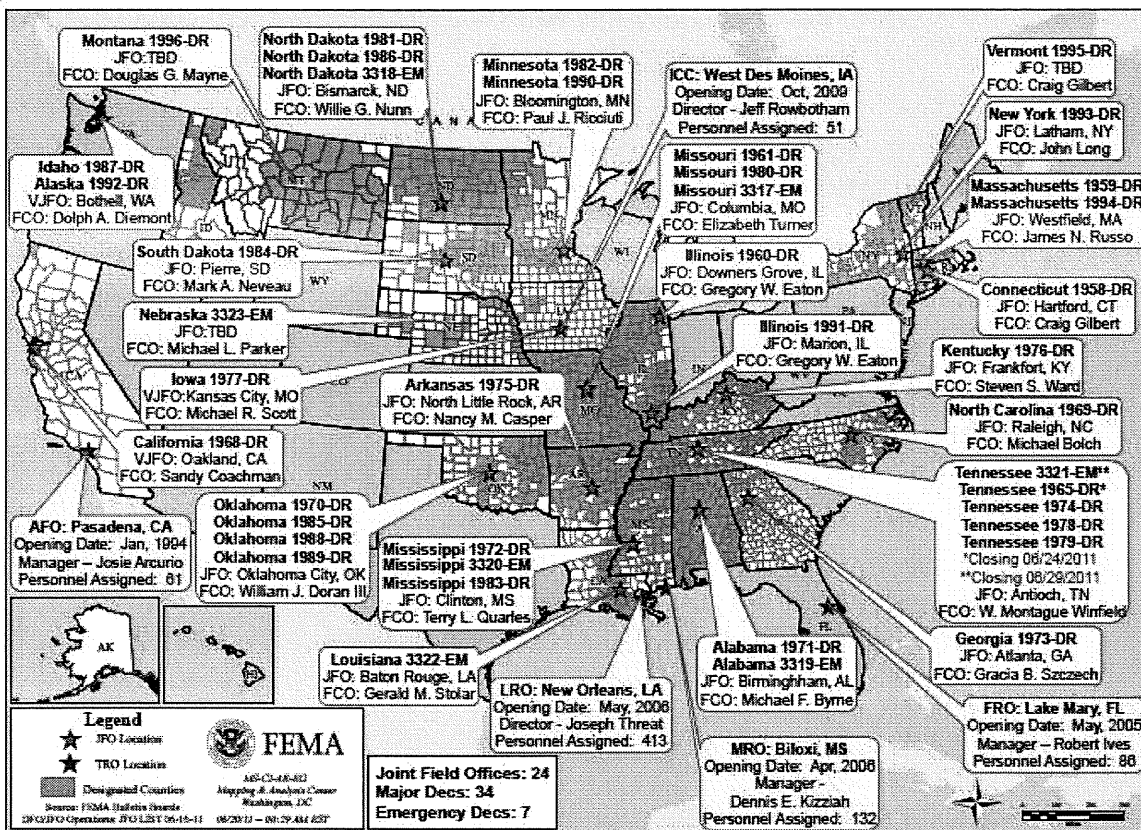
No new declaration activity.

Joint Preliminary Damage Assessment Activity							
				Number of Counties/Tribes			
Region	State	Event	IA/ PA	Requested	Ongoing	Complete	(Estimated) Start/End Date
II	NY	Spring Flooding 4/26	IA	4	4	0	Began 6/14 End TBD
			PA	8	6	2	
IV	MS	Severe Weather 5/3	PA	14	9	5	Began 6/10 End TBD
V	MI	Severe Storms 5/29	IA	1	0	0	Began 6/17 End TBD
			PA	1	0	0	
VII	KS	Severe Storms, Tornadoes & Flooding 5/19	PA	29	0	0	Begin 6/20 End TBD
VII	IA	Flooding 5/25	PA	6	6	0	Began 6/16 End TBD
VIII	MT	Flooding	IA	15 counties; 1 Tribe	0	0	Begin 6/21 End 6/25
VIII	ND	Flooding	IA	4	2	2	Began 6/18 End 6/20
VIII	WY	Flooding	TBD	TBD	0	0	Begin Week of 6/20

On-Call and Deployed Teams		
Teams	Status	Location
National IMAT Red	Activated	Deployed to MS
National IMAT White	Not Activated	
National IMAT Blue	Activated	Deployed to AL
Regional Teams		
Region I IMAT	Activated	Deployed to MA
Region II IMAT	Not Activated	
Region III IMAT	Not Activated	Reconstituting
Region IV IMAT	Activated	Type II deployed to TN and AL
Region V IMAT	Not Activated	
Region VI IMAT	Activated	Type II supporting 1975-DR-AR Type III Supporting 1971-DR-TX Type III deployed to OK
Region VII IMAT	Activated	Type II 1980-DR-MO Type II deployed to NE
Region VIII IMAT	Activated	Type III supporting DR-1984-SD Type III supporting DR-1981/1986 ND Type II deployed to MT
Region IX IMAT	Not Activated	
Region X IMAT	Not Activated	Type II supporting DR-1992-AK
Other FEMA National Teams		
Hurricane Liaison Team	Activated	
NRCC	Not Activated	
National Watch Center	24/7	
DEST	Not Activated	

Activation Levels		
Region	RRCC	Watch
Region I	Watch/Steady State	Maynard MOC (24/7)
Region II	Watch/Steady State	24/7
Region III	Watch/Steady State	24/7
Region IV	Watch/Steady State	24/7
Region V	Watch/Steady State	24/7
Region VI	Watch/Steady State	Denton MOC (24/7)
Region VII	Level III	24/7
Region VIII	Level III	Denver MOC (24/7)
Region IX	Watch/Steady State	24/7
Region X	Watch/Steady State	Bothell MOC (24/7)

Open Field Offices & Designated Counties as of 06/20/2011



[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Monday, June 20, 2011 11:04 AM
To: [REDACTED] NWD02
Subject: RE: Use of Flood Control Storage at Reclamation Reservoirs (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sounds good. I read through it and had no additional comments.

Thanks for coordinating this.

Jody

-----Original Message-----

From: [REDACTED] NWD02
Sent: Saturday, June 18, 2011 2:54 PM
To: Farhat, Jody S NWD02
Subject: FW: Use of Flood Control Storage at Reclamation Reservoirs (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

The only change I would suggest is that they modify their description of Keyhole to indicate that "with no releases being made from Keyhole, currently or forecasted, inflows are so low that the reservoir level is not expected to enter the flood control pool."

- [REDACTED]

[REDACTED]
Missouri River Basin Water Management,
Northwestern Division, USACE
402 [REDACTED]
402 [REDACTED] (fax)

-----Original Message-----

From: [REDACTED] NWO
Sent: Friday, June 17, 2011 6:53 PM
To: Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED] NWD02
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED]; [REDACTED]
[REDACTED], H
Subject: Use of Flood Control Storage at Reclamation Reservoirs

Attached is a draft response to request from Missouri River Water Management Division for use of flood control storage in Reclamation Reservoirs. This memorandum will be finalized on Monday, June 20. Please provide comments or suggestions by email or we can meet with you if necessary.

Thanks,

[REDACTED]
[REDACTED]
Water Control & Water Quality Section

402- [REDACTED] (office)

402- [REDACTED] (cell)

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Monday, June 20, 2011 4:55 PM
To: Farhat, Jody S NWD02; McMahon, John R BG NWD; Tipton, Robert A Col NWD; Anderson, G Witt NWD; Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK; Blechinger, Erik T NWO; [REDACTED] NWD; [REDACTED] NWK; Blair, Amy E NWK; Williamson, Eileen L NWO; Farmer, Monique L NWO; Johnston, Paul T HQ@ NWO; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] M NWD02; Love, Raymond E MAJ NWD; [REDACTED] NWO; Krajewski, Matthew S NWO; [REDACTED] M SAW
Cc: [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] D NWD02; [REDACTED] NWD02; [REDACTED] C NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02
Subject: RE: WM Talking Points for 20 June stakeholder call (UNCLASSIFIED)
Attachments: 2011 Missouri River Flood Talking Points 20 Jun 2011.docx

Classification: UNCLASSIFIED
Caveats: NONE

fyi

Classification: UNCLASSIFIED
Caveats: NONE

2011 Missouri River Flood Talking Points
Missouri River Water Management
20 June 2011

We posted the updated reservoir forecast on the web this afternoon. We continue to watch the rain over the Dakotas but for now the previously announced peak releases remain unchanged.

There were two minor changes to the release schedule. First, Fort Randall releases will be held at 143,000 cfs for one more day before we start stepping up; this is to manage the Gavins Point pool level. And second, the schedule shows reducing Fort Peck releases to 55,000 cfs late in the forecast period when that reservoir falls below the top of the exclusive zone. At that time, Garrison reservoir is forecast to still be in surcharge, so reducing Fort Peck releases will reduce inflow into Garrison a bit.

Releases for the 6 dams are as follows:

- Fort Peck – Releases were reduced to 60,000 today and will be held at that level as inflows continue to decline.
- Garrison – releases remain at 150,000 cfs
- Oahe and Big Bend – Releases from both projects remain at 160,000 cfs today, and will be held at that level.
- Fort Randall – releases will remain at 143,000 cfs today and tomorrow, gradually stepping up to the peak release of approximately 148,000 cfs with the schedule dependent on the Gavins Point pool level.
- Gavins Point – releases remain at 150,000 cfs.

The forecast is based on best available information at this time; actual releases are based on conditions on the ground. Peak releases are expected to continue well into August.

The mountain snowpack continues to decline.

Above Fort Peck: peaked at 141 percent of the normal peak accumulation, currently at 61%, down 57% from this year's peak

Fort Peck to Garrison: peaked at 136 percent of the normal peak accumulation, currently at 65%, down 52% from this year's peak

As of June 17

North Platte: peaked at 156 percent of the normal peak accumulation, currently at 54% (-65%)

South Platte: peaked at 150 percent of the normal peak accumulation, currently at 42% (-72%)

NWO

From: Farhat, Jody S NWD02
Sent: Monday, June 20, 2011 4:56 PM
To: david.hendee@owh.com
Subject: 1898 runoff slide (UNCLASSIFIED)
Attachments: 1898 Runoff slide.pptx

Classification: UNCLASSIFIED
Caveats: NONE

David,

Got your voice message. Attached is the slide depicting annual runoff in the Missouri River basin since 1898.

Let me know if I can be of further assistance.

VR,
Jody

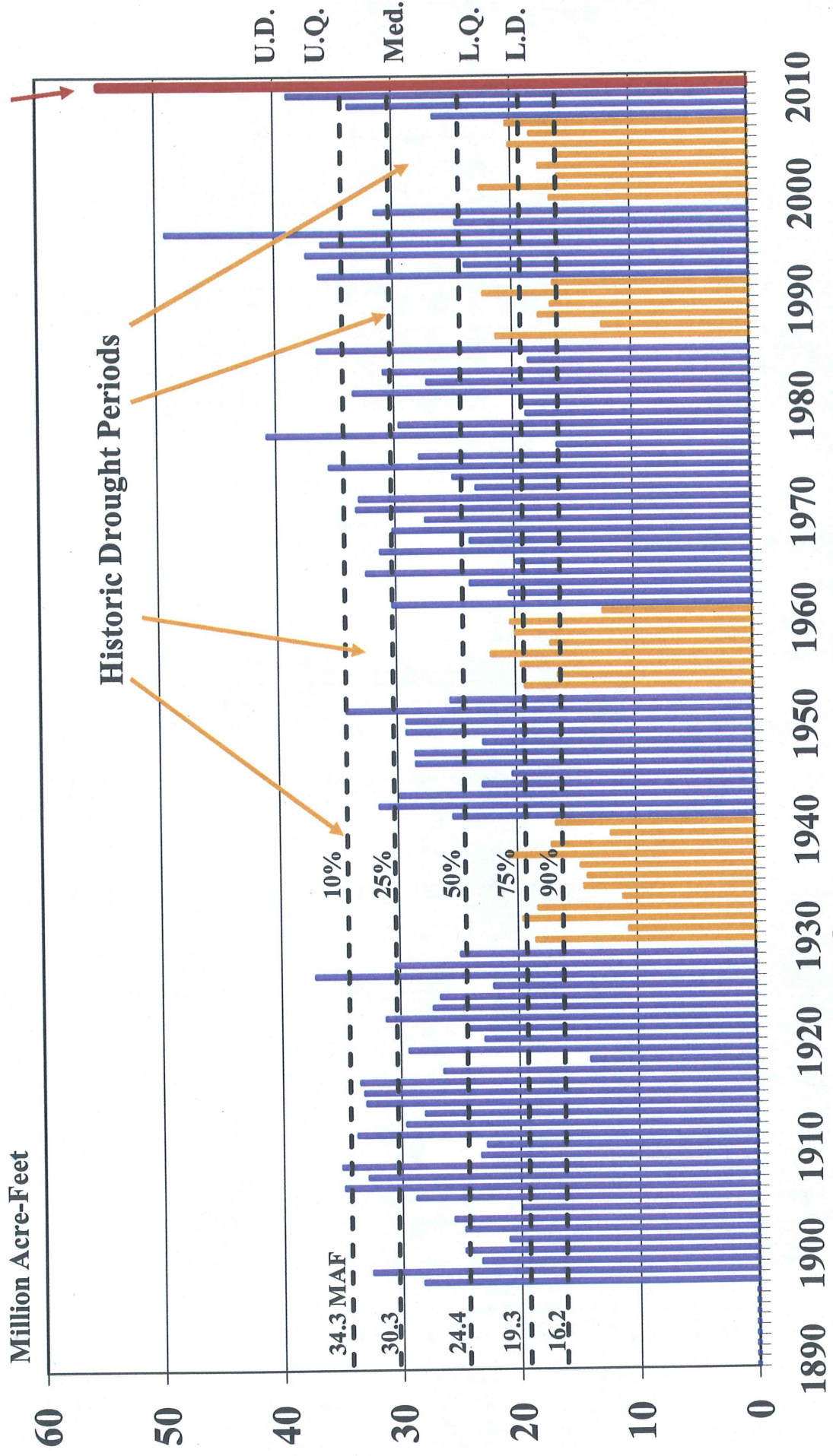
Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Mainstem System

Annual Runoff above Sioux City, IA

2011

Forecast



NWO

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 9:19 AM
To: McMahon, John R BG NWD; Anderson, G Witt NWD
Cc: Blechinger, Erik T NWO
Subject: Update (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sir - I need to update you and Witt on the impacts of last night's heavy rain over the Oahe, Big Bend, Fort Randall and Gavins Point drainage areas. We have already reduced releases from Oahe and Fort Randall. More changes are likely.

Please call at your earliest convenience.

Jody

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 9:47 AM
To: [REDACTED] NWO
Subject: RE: Snow pack data (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED]
Here's the latest as of June 20:

Above Fort Peck = Peaked at 141% of the normal peak, currently at 61% Fort Peck to Garrison =
Peaked at 136% of the normal peak, currently at 65%

Jody

-----Original Message-----

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 9:23 AM
To: Farhat, Jody S NWD02
Subject: Snow pack data

Jody,

Do you have the FP and GA snow pack numbers? I usually include them in the morning brief to the SDEM EOC and have not seen updated numbers since 17 June.

Thanks.

[REDACTED]
USACE, Oahe Project
[REDACTED] ext [REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 1:48 PM
To: Williamson, Eileen L NWO; [REDACTED] NWO; [REDACTED] NWD02
Subject: RE: changes to Riverwatch storyboard (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I don't have a problem saying that the reservoirs are in the exclusive flood control zone. One thing I would add to the riverwatch is where it says "top of spillway gates" - I would change that to say "top of spillway gates in closed position" since the top is higher when we open the gates and use the spillways.

Jody

-----Original Message-----
From: Williamson, Eileen L NWO
Sent: Tuesday, June 21, 2011 12:35 PM
To: [REDACTED] NWO; [REDACTED] NWD02
Cc: Farhat, Jody S NWD02
Subject: RE: changes to Riverwatch storyboard (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Has Jody reviewed these changes?
I am concerned about the exclusive flood control pool message for Fort Randall and Oahe and want to be sure Jody is aware and vetting. - We didn't use this in the Riverwatch at Garrison or Fort Peck.

-----Original Message-----
From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 12:27 PM
To: [REDACTED] NWD02
Cc: Williamson, Eileen L NWO
Subject: changes to Riverwatch storyboard (UNCLASSIFIED)


Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] & Eileen,

Please review the attached storyboard - particularly the wording under the scheduled releases.

Thanks,

[REDACTED]
[REDACTED]
[REDACTED]
Planning Branch
Corps of Engineers, Omaha District
1616 Capitol Avenue

Omaha, NE 68102


Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 1:53 PM
To: [REDACTED] NWO; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK
Cc: MRJIC; Blechinger, Erik T NWO
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I agree that the response should come from MRJIC to ensure consistent messaging. Steve, you could just reply that the email has been forwarded to MRJIC for response. I know the JIC is handling many email comments and best to let them handle it. If they need specific input from me, they'll come ask for it.

Jody

-----Original Message-----

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 10:15 AM
To: [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK
Cc: Farhat, Jody S NWD02; MRJIC
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I would recommend a response from Jody and/or the MRJIC. This would ensure a uniform message up and down the basin. All of these same issues were brought up in the upper basin also so it is not unique to this individual.

[REDACTED]
-----Original Message-----

From: [REDACTED] NWK
Sent: Tuesday, June 21, 2011 9:43 AM
To: [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Yesterday I received the email message from Mr Stephens. Below is a draft response to Mr Stephens email note to me. Please feel free to edit as you see fit to help craft our important response message. Do you see merit in also sending to the STL Post (I did verify it was included in the 12 June editorial section)?

Mr. Stephens,

I do appreciate you taking the time to write me a letter and for expressing your concerns regarding this historic Missouri River flood event. As you might expect, I do not agree with your assumptions and would like the opportunity to share some information (thoughts?) with you.

Background for current situation:

- First, it is important to recognize that each flood is unique. For example, the 1993 flood you referenced resulted from extensive and repeated high rainfall events on the lower plains and across Missouri. Uncontrolled flows from rivers such as the Chariton, Grand, and Platte contributed extensively to that flood event. To date the 2011 event has been the result of historic snow and rain events in the upper basin. (is all this correct?)
- 2010 was the third highest water year on record for the entire basin. As the 2010 flood subsided late in the summer, the Corps began to release high levels of water from the six mainstem reservoirs throughout the winter. The releases were slowed in January due to significant ice development and the potential for ice jam flooding. Releases were increased once that threat had passed.
- On January 28, 2011, the reservoir system had full flood capacity for this year's runoff season.
- On May 1, the Corps projected summer releases of 57,500 cfs from Gavins Point Dam; we were on schedule to evacuate the runoff from the record snowpack.
- Then came the extraordinary rainfall during May 2011 - the equivalent of 1 years rain in a two week period! The rains in Montana, the Dakotas and Wyoming resulted in 3 times the monthly average runoff (10.5 million acre-feet vs 3.3 MAF). This was the second highest single month of runoff within the basin since 1898 - the record is 13.2 MAF in April of 1952.
- The reservoir system is operating as planned and designed. In fact, imagine the scenario if the mainstem reservoirs were not in place or allowed to run uncontrolled. The balance is to evacuate water from the entire system as rapidly as possible while recognizing down river constraints.

Operation:

- Since Lewis and Clark returned from their expedition, the Army Engineers have had very close ties to the Missouri River. Over the years, the U.S. Army Corps of Engineers has been charged by Congress to remove snags, protect banks, construct navigation channels and build flood risk management structures (levees and dams) on the Missouri River to provide social and economic benefits to the nation. Some of these development activities on the Missouri River have come at the expense of the river's native fish and wildlife.
- The Corps operates the Missouri River as a system for eight Congressionally authorized purposes (alphabetically) -- fish & wildlife, flood control, hydropower, irrigation, navigation, recreation, water supply, and water quality.
- There are two large water resource projects on the Missouri River - the six mainstem dams and the Bank Stabilization and Navigation Project(BSNP).
- The US Fish and Wildlife Service gave the Corps a Biological Opinion (BO) in 2000 (amended in 2003) which stated our operations of the Missouri River jeopardized the three federally listed species - pallid sturgeon, least tern, and piping plover.
- With local, state and federal input, the Missouri River Mainstem Reservoir System's Master Water Control Manual was approved in 2004 and updated in 2006. This is what guides the operation of the Missouri River for the eight authorized purposes and keeps the Corps in compliance with the BO.

Spring Pulse:

- In response to the needs of the native river fish on the Lower Missouri River, especially the endangered pallid sturgeon, March and May spring pulses from Gavins Point Dam are run when certain conditions exist - adequate water in the reservoirs, high flow limits would not be exceeded downriver.
- Pallid sturgeon need higher spring flows to cue spawning and to link them to other areas of the river during their life cycle. The spring pulse from Gavins Point Dam, located on the

Nebraska and South Dakota border, is meant to replicate a natural seasonal rise that prompts the species to spawn.

- Pallid sturgeon are an ancient species protected by the Endangered Species Act.
- Spring pulses created spring rises on the downstream Missouri River. These pulses are designed to mimic the much larger, historic spring rises on the Missouri River, which still occur naturally as one proceeds further down the Lower Missouri River.
- The environmental benefits of the created spring rises are, therefore, to be more significant in the upper 200 miles of the Lower Missouri River from Gavins Point Dam to about Omaha, Nebraska.
- The March 2011 pulse was to be 5,000 cubic feet per second minus the James River flow near its confluence with the Missouri upstream of Sioux City, Iowa. However, the James River was nearly 25,000 cfs (plains snowpack melt) and the Missouri River was already above the downstream flow limits set to reduce or eliminate farmland flooding at Omaha, Nebraska City and Kansas City, Mo. Result was a natural spring pulse from uncontrolled tributaries and not a created pulse. Same held for the May 2011 pulse.

Finally, the Corps does take very seriously its job of operating the Missouri River system to meet the eight authorized purposes. It should be noted that the Corps projects on the Missouri River have provided benefits to the nation in categories such as hydropower, flood risk management, recreation and navigation valued at nearly \$2 billion annually; with a total annual cost to operate these projects of approximately \$120 million. The total Corps investment on the Missouri River mainstem to date has been just over \$4 billion.

Sincerely,

[REDACTED]
[REDACTED]
Missouri River Recovery Program
US Army Corps of Engineers
O: [REDACTED] (Kansas City)
O: [REDACTED] (Omaha)
C: [REDACTED]
[REDACTED]@usace.army.mil

-----Original Message-----

From: harold9735@aol.com [mailto:harold9735@aol.com]
Sent: Monday, June 20, 2011 9:47 AM
To: [REDACTED] NWK
Subject: Missouri River Recovery Plan

Mr. Fischer,

Below is a letter that I sent to the St. Louis Post Dispatch, and they published on Sunday June 12, about the Corps mismanagement of the Missouri river. A would appreciate your comments on the letter. I think more and more the public is beginning to understand the abuse of power given to the Corps by congress by causing more and larger floods than would normally occur.

Corps of Engineers wrong again

Last week the Corps of Engineers announced that over the next few weeks they will be releasing up to 150,000 CFS of water from the Gavins Point reservoir on the upper Missouri river, which will cause record flooding down stream. Their explanation for this release was due to heavy rainfall and heavy snow pack in the upper Northern area. Naturally, as always, the public listens and absorbs what the Corps puts out as gospel. However, the farmers and people who have had experience with the Corps over many years fully understand the true reasons for some but not all floods on the Mississippi and Missouri rivers.

For several years now the Corps has wanted to create flooding by rising the Missouri river level up to 3 feet above flood stage twice each spring to improve spawning of the spoonbill/paddlefish.. The crops have been unable to do this as planned every year due to insufficient water in the reservoirs on the upper Missouri river. Therefore they have been holding as much water as possible in those reservoirs saving it to be able to create the spring floods as planned. Well they got burnt again, as they did in 1973/1993. As the heavy rains came with the reservoirs already full or nearly full, they have to release massive amounts of water during what might have been a normal flood event. Most likely there would have been some flooding without the Corps expert assistance. This is but one of the many floods we can attribute to the Corps mismanagement of the rivers.

Harold L. Stephens
9735 N. State Route 94
West Alton, Mo. 63386
636-899-1055

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 6:55 PM
To: Tom & Karla Waters
Subject: RE: ***RIVER UPDATE***MLDDA***RIVER UPDATE*** (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Tom - Garrison releases are staying at the current rate of 150,000 cfs. Big Bend releases will go up to 165,000 cfs for a week to 10 days and then will be reduced to 160,000 cfs.

Thanks,
Jody

-----Original Message-----

From: Tom & Karla Waters [mailto:waters4@ix.netcom.com]
Sent: Tuesday, June 21, 2011 6:02 PM
To: Waters Tom & Karla
Subject: ***RIVER UPDATE***MLDDA***RIVER UPDATE***
Importance: High

Missouri River Joint Information Conference Call Report

June 21, 2011

Friends:

The Missouri River Joint Information Center held a conference call this evening from the Division offices in Omaha, Nebraska. Mr. Erick Blechinger, at the Missouri River Joint Information Center, hosted the call. The following is information from the call:

Opening remarks:

The Phone Number for the Joint Information Center is:

(877) 214-9110.

The MRJIC website is: MRJIC@USACE.ARMY.MIL <mailto:MRJIC@USACE.ARMY.MIL>

The Public is encouraged to use the phone number or website to contact the Information Center with questions or concerns.

The Joint Information Center is open 7am-8pm. Phone calls are forwarded during non-working hours and will be answered 24/7. The Joint Information Center responded to 19 media requests for Kansas City and Omaha today.

LEVEE BREACH

No new levee breaches today

LEVEES OVERTOPPING

Federal Levee L-550 near Rock Port, Missouri is overtopping at approximately River Mile 535.5. The Local sponsor has determined the overtopping is too severe for any flood fighting activities to protect this levee. As of this evening, the levee is still holding together.

Federal Levee R-548 Across the River from L-550 is overtopping. Sponsor has placed some sandbags on the levee and no water was seen on the levee top today.

Major flood fighting is ongoing at Levee L-536 near Rock Port

Current Levee Breaches:

L-575 Near Hamburg, Iowa

Union Township, Near Craig, Missouri

Holt County #10, Big Lake, Missouri

Current Levee Overtoppings:

L-550 Near Rock Port, Missouri

R-548 Near Brownville Nebraska

Current Weather Conditions

The current weather system is beginning to move North and East making its way out of the Missouri River Basin as the Low Pressure moves away. There will be only a few lingering spotty showers Wednesday into Thursday East of the Missouri River. The North East corner of North Dakota may see some areas of 1' rainfall. For the most part, Montana and the Western Dakotas will begin drying out. Another system will be moving in from the Pacific on Friday and Saturday with rainfall of less than 1" for the next five days total.

There has been a Change in Releases

Heavy rains in the last 24-48 hours has caused the U.S. Army Corps of Engineers to make changes in the current release schedule.

Gavins Point Releases will be increased to 160,000 cfs by Thursday Morning.

Water Release and Reservoir Information:

The Reservoir Control Center will adjust releases with ever changing conditions. Daily planned releases will be posted each day on the Division website around 4:00-4:30 each day.

Weather across the basin has impacted the release schedule for the reservoir system. The reservoir control center has very little flexibility remaining. Oahe, Big Bend and Fort Randall reservoirs all received high inflows. To best manage the system several changes are being made. Oahe will be reduce from 160,000 cfs to 150,000 cfs to allow more room in Big Bend and keep Big Bend from rising too fast. This will be a short-term change and Oahe will go back up to 160,00 in a few days. Releases from Randall will be reduced from 143,000 cfs to 138,000 cfs to reduce flows in to Gavins Point, which is also seeing high inflows.

Current plans for the reservoirs are as follows:

Fort Peck 60,000cfs today and hold levels are declining

Garrison 150,000 cfs today and to 156,000cfs tomorrow for a week to 10 days.

Oahe 150,000cfs today and hold for a few days

Big Bend 163,000cfs today and to 165,000 cfs tomorrow then hold

Randall 138,000cfs today, then to 157,000 cfs depending on the Gavins Point pool

Gavins Point 150,000 cfs today and 155,000 cfs tomorrow and to 160,000 cfs by Thursday Morning.

Peak Releases are expected to stay high well into August.

Releases are based on conditions on the ground and subject to change.

Kansas Reservoirs Releases:

Milford is releasing Minimum Flows

Tuttle Cree is releasing Minimum Flows Perry is releasing Minimum Flow

Releases from the Truman Reservoir in Missouri have increased to 15,000 cfs for power generation.

Snow Pack Update:

The snow above Fort Peck peaked at 141% of normal and is now down to 58% of normal. The snow in the reach between Fort Peck and Garrison (primarily the Yellowstone basin) peaked at 136% and is now down to 63%. The snow in the North Plate basin peaked at 150% of Normal and is currently down to 43% and the snow pack in the South Platte Basin peaked at 150% of Normal and is down to 35% of Normal.

Department of Transportation Update:

Interstate I-29 Update:

Interstate I-29 is closed from Mile Post 110 in Missouri north to Mile Post 10 in Iowa. Iowa DOT may close an additional 10 miles north to Mile marker 20 in the next few days. I-29 is also closed from Mile markers 55 to 71 beginning near the Council Bluffs/Omaha area and north.

The Global Detour for I-29 is: I-35 North to I-80 west to I-680 to I-29 north of Council Bluffs

In Iowa: Highway 2 crossing the Missouri River is closed.

In Missouri: US Highway 159 in Holt County is closed-This also closes the Bridge to Rulo. US Highway 136 in Atchison County is Closed cutting off access to the Brownville Bridge.

Nearly all crossing across the Missouri River are closed in Northwestern Missouri. The best detour across the River is US Highway 36 at St. Joseph or bridges in the Kansas City area. The best route for traffic coming from the west is I-70.

In Nebraska, Highway 159 at Rulo is closed and US 136 is closed at Brownsville.

High water and roads closures are impacting traffic flow and motorists are encouraged to plan accordingly and drive with care. High water is expected through August so many of these roads will remain closed for an extended period. Currently 40+ miles of I-29 are closed.

Omaha District Update:

The Omaha District continues to help build many levee projects and improvements as they continue to be in a full flood fight at several locations within their area of operations.

Water is now up on the Ditch #6 levee protecting Hamburg, Iowa. The water is now at 913.57' and there is a little over 5' of freeboard at this time. Teams from the Omaha District are on the ground and in the air monitoring levees.

Kansas City District Update:

The KC District is providing technical and direct assistance to Missouri River stakeholders at many locations. The Kansas City main area of concern is from Rulo, NE to Kansas City.

The Kansas City District will have new flood inundation maps with the 160,000 cfs releases figured in by the end of the week.

Tributaries remain in good shape on the lower Missouri River.

The Kansas City District has 3.4 million sandbags on hand, 8 pumps and no sandbagging machines. Currently, there is 1 sandbagging machine operating in Rock Port, 1 in Beverly and 1 in Craig. Contracts are in place for more sandbag machines and pumps, if needed.

The Missouri River is closed to all traffic from River Mile 450 to Gavins Point Dam.

The KC District EOC is Current at Level II, subject to changes based on river conditions.

The KC District is conducting daily recon flights to survey River conditions.

For additional information during the day, follow the Missouri Levee & Drainage District Association Twitter site at: @MissouriLevees

Stay Safe!

Tom Waters

Missouri Levee & Drainage District Association

Contact Information:

Tom Waters, Chairman

Missouri Levee & Drainage District Association

36257 Highway Z

Orrick, Missouri 64077

(816) 770-5562

(816) 591-7949 Cell

Northwestern Division:

www.nwd.usace.army.mil

twitter.com/#!/NWDCorps

KC District:

www.nwk.usace.army.mil

www.facebook.com/usace.kcd

twitter.com/#!/KC_USACE

Omaha District:

www.nwo.usace.army.mil

www.facebook.com/OmahaUSACE

twitter.com/#!/OmahaUSACE

The Phone Number to the Missouri River Joint Information Center is:

(402) 996-3877 or Toll Free (877) 214-9110

The E-mail Address for the Missouri River Joint Information Center is:

MRJIC@USACE.ARMY.MIL

The Facebook page for the Missouri River Joint Information Center is:

<http://www.facebook.com/OperationMightyMO>

The Phone Number for the Kansas City Emergency Operations Center is:

(816) 426-6320

The Phone Number for the Omaha Emergency Operation Center is:

(402) 995-2448

Levee Status Charts are now available on the KC District Website at:

[http:// www.nwk.usace.army.mil/Flood/InundationMaps.cfm](http://www.nwk.usace.army.mil/Flood/InundationMaps.cfm) This includes Non-Federal and Federal levee status in Kansas City Districts area of

responsibility. Once on page click Non-Federal Levee Status and Federal Levee

Status to view chart. Chart shows predicted freeboard of levees based on

currently planned 150kcfs releases from Gavins Point.

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 7:00 PM
To: [REDACTED] NWO
Subject: RE: Today's staff notes (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

[REDACTED] - As I'm sure you know there were no changes to Garrison releases. We reduced inflows later in the forecast period slightly which reduced your forecasted pool level about half a foot - we may be taking additional water out tomorrow as we try to hone in on the remaining snowpack runoff.

Sorry for the late posting of the forecast. Lots a bit of runoff coming into the lower four reservoirs made for a very hectic day.

Jody

-----Original Message-----

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 5:28 PM
To: DLL-CENWO-OD-GA; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] HQ02; [REDACTED]
[REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] Y@ POD; [REDACTED] NWO
Subject: Today's staff notes (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

All,
I apologize for the delay in getting today's notes out. Too many unplanned interruptions again today... I did not attach the current 3-week schedule as it changed again, rather significantly and has rendered several issues addressed again today irrelevant. I'll try again tomorrow.

[REDACTED]
[REDACTED] Garrison Project

Classification: UNCLASSIFIED
Caveats: FOUO

Classification: UNCLASSIFIED
Caveats: FOUO

NWO

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 7:01 PM
To: Farhat, Jody S NWD02; McMahon, John R BG NWD; Tipton, Robert A Col NWD; Anderson, G Witt NWD; Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK; Blechinger, Erik T NWO; [REDACTED] NWD; [REDACTED] NWK; Blair, Amy E NWK; Williamson, Eileen L NWO; Farmer, Monique L NWO; Johnston, Paul T HQ@ NWO; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] M NWD02; Love, Raymond E MAJ NWD; L [REDACTED] NWO; [REDACTED] NWO; [REDACTED] M SAW
Cc: [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] M NWD02
Subject: RE: WM Talking Points for 21 June stakeholder call (UNCLASSIFIED)
Attachments: 2011 Missouri River Flood Talking Points 21 Jun 2011.docx

Classification: UNCLASSIFIED
Caveats: NONE

fyi

Classification: UNCLASSIFIED
Caveats: NONE

2011 Missouri River Flood Talking Points
Missouri River Water Management
21 June 2011

We posted the updated reservoir forecast on the web this afternoon. Heavy rain over South Dakota and northern Nebraska has forced us to make several changes to our planned releases from the lower 4 reservoirs.

Releases from Oahe reservoir were reduced from 160,000 cfs to 150,000 cfs this morning due to very high flows on the Bad River, which enters the Missouri River just downstream of Pierre, SD. The release reduction was necessary to manage the Big Bend pool level, Big Bend reservoir has very little flood control storage. Releases from Oahe will be returned to the 160,000 cfs rate as soon as flows on the Bad River recede, likely within the next day or two.

Big Bend releases were increased from 160,000 cfs today to 163,000 cfs and will be further increased to 165,000 cfs tomorrow. They will remain at that level for a week to 10 days to help manage the Big Bend pool level.

Releases from Fort Randall were reduced 5,000 cfs this morning, to 138,000 cfs, due to expected high inflows into Gavins Point reservoir from last night's rain. They will be held at that level for several days. Releases will eventually be stepped up to approximately 157,000 cfs.

Releases from Gavins Point dam will be increased to 155,000 cfs tomorrow morning (Wednesday) and to 160,000 cfs on Thursday morning. No additional release increases are planned at this time.

Releases for the remaining two dams are as follows:

- Fort Peck – releases remain at 60,000 cfs
- Garrison – releases remain at 150,000 cfs

The forecast is based on best available information at this time; actual releases are based on conditions on the ground. Peak releases are expected to continue well into August.

The mountain snowpack continues to decline.

Above Fort Peck: peaked at 141 percent of the normal peak accumulation, currently at 58%, down 59% from this year's peak

Fort Peck to Garrison: peaked at 136 percent of the normal peak accumulation, currently at 63%, down 54% from this year's peak

As of June 21

North Platte: peaked at 156 percent of the normal peak accumulation, currently at 43% (-72%)

South Platte: peaked at 150 percent of the normal peak accumulation, currently at 35% (-77%)

NWO

From: CENWD-EOC NWD
Sent: Tuesday, June 21, 2011 11:28 PM
To: CE-UOC HQ02
Cc: [REDACTED] HQ02; [REDACTED] HQ; [REDACTED] SWD@SWG; [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] NWS; Anderson, G Witt NWD; [REDACTED] HQ@NWD; [REDACTED] ULA; [REDACTED] NWD; [REDACTED] NWD; Blechinger, Erik T NWO; [REDACTED] NWW; [REDACTED] NWP; CENWD-EOC NWD; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] HQ; [REDACTED] HQ02; [REDACTED] NWW; [REDACTED] NWD; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Jordano, James J LTC NWO; [REDACTED] ULA@SAD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWS; [REDACTED] NWD; [REDACTED] SAW; [REDACTED] ULA@NWD; McMahon, John R BG NWD; Miles, Steven R COL NWP; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] CELA@NWS; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] Ruch, Robert J COL NWO; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Tipton, Robert A Col NWD; [REDACTED] NWD; [REDACTED] ULA@NWW; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] NWS

Subject: NWD Operation Mighty Mo SITREP- as of 2130 21 June 2011 (UNCLASSIFIED)
Attachments: MR_Levee_Freeboard_062111.pdf; NWD CT EOC ACTION TRACKER 21 June 11.pdf; NWD Missouri Basin Update - 062111.pdf; NWD%20Contingency%20battle%20rhythm%2013%20JUN%202011.pdf; Flood_Fight_Storyboard_21JUN.pdf

HQ UOC-

Missouri River Basin Flood Update as of 2130 Tuesday, 21 June 2011 Pacific Time:

This report covers the operational period from 2130 Monday June 19, to 2130 Tuesday, June 20, 2011 Pacific Time.

NWD Missouri River Water Management Office Update:

A. BLUF: Heavy rain over South Dakota and northern Nebraska has forced us to make several changes to our planned releases from the lower 4 reservoirs.

1. Releases from Oahe reservoir were reduced from 160,000 cfs to 150,000 cfs this morning due to very high flows on the Bad River, which enters the Missouri River just downstream of Pierre, SD. The release reduction was necessary to manage the Big Bend pool level, Big Bend reservoir has very little flood control storage. Releases from Oahe will be returned to the 160,000 cfs rate as soon as flows on the Bad River recede, likely within the next day or two.

2. Big Bend releases were increased from 160,000 cfs to 163,000 cfs and will be further increased to 165,000 cfs tomorrow. They will remain at that level for a week to 10 days to help manage the Big Bend pool level.

3. Releases from Fort Randall were reduced 5,000 cfs this morning, to 138,000 cfs, due to expected high inflows into Gavins Point reservoir from last night's rain. They will be held at that level for several days. Releases will eventually be stepped up to approximately 157,000 cfs.

4. Releases from Gavins Point dam will be increased to 155,000 cfs tomorrow morning (Wednesday) and to 160,000 cfs on Thursday morning. No additional release increases are planned at this time.
 5. Releases for the remaining two dams are as follows: Fort Peck - releases remain at 60,000 cfs and Garrison - releases remain at 150,000 cfs
 6. Downstream impacts of increased releases were assessed as negligible. These high releases are still projected to remain high through the middle of August.
- -----

B. Omaha District Update:

1. A technical and direct assistance request for elevating the roadway to the Tribal Casino on the Reservation land was submitted. NWO EM chief and tribal liaison made the initial contact with the tribe and communicated to the Tribal member that the Tribal Casino did not meet the criteria for Critical Infrastructure protective measures. NWD RCO Chief attempted to contact Tribe Chairman today in order to discuss decision, however, was unsuccessful in making contact.
2. Montana: Wolf Point, MT - Tech team traveled to Wolf Point to provide technical and potentially direct assistance to the city to advise them on protecting their finishing ponds. Erosion is expected to continue progressing at this site. However, at this time, erosion is not expected to progress to a point where it would threaten the integrity of the polishing lagoon berm.
3. Status of Missouri River Levees:
L536/550-Turkey Creek: On June 20, at L550, a large sandbag was dropped by helicopter, however, there was an equipment malfunction. More were planned to be dropped today. Observations today at L536 are that the levee has eroded approximately half of the way through crest but has not failed as of this morning. The erosion has slowed. The sponsor of L550 requested an additional 150 large sandbags and slings. The sponsor picked them up from the warehouse this morning.
4. Lake Waconda, Nebraska: USACE Technical team identified four areas of concern: multiple active sand boils, large ponding/seepage area landward of levee. Recommendations for addressing the concerns were provided to the sponsor and the Cass County EM. The potential for a levee failure remains. The landside toe of the levee, in certain sections, was saturated and some ponding was observed. Team recommended to the sponsor that an inverted sand filter be constructed at the seepage location. Multiple punctures in the clay liner of the lake were identified, typically 1-2' in diameter. The team recommended that a differential head between the river and lake of 6' be maintained. Discussion with sponsor made it apparent that maintaining the 6' pressure differential between the lake and the river will cause some homes to flood. The team strongly recommended maintaining the 6' differential. Team also provided instruction for how to properly ring sand boils. It was recommended that ponding water be allowed to pond. To prevent erosion due to wave wash team recommended placing riprap or plastic along riverside face.

5. R562-Peru: Yesterday, there was no observed change in the piping issue, which was still flowing clear at a rate of 10 gpm. No action will be taken unless the embankment shows signs of distress or the river level drops.
6. R548- MO River and Little Nemaha: Yesterday, R548 #2 had between 1-1.5' of freeboard. The local sponsor has sandbagged low spots both North and South of Cooper Nuclear Station. The Corps recommended that the sponsor continue to sandbag low areas. However, sponsor has instead stockpiled sandbags with plans to continue placing sandbag if river rises. The sponsor is doing the MINIMAL amount of work and NOT being proactive. An issue with a flap gate has been fixed with an inflatable bladder and is working well.
7. Dakota Dunes, SD - Continuing to monitor erosion along South levee, the sponsor has armored the levee slope with rip-rap to mitigate erosion damage.
8. Fort Randall Dam, SD - The repair of the concrete slab spalling work is being completed by project personnel. Project personnel also plugged the drain holes in the sidewalls of the spillway to reduce backflow of water surcharging the groundwater and water spouting out the piezometer holes and slab joints adjacent to the spillway.
9. Oacoma, SD - has requested technical assistance, Chamberlin has not formally requested assistance to date. [REDACTED] met with Lyman County EM and Oacoma City Council last night. Also met with City of Chamberlain Mayor and City Engineer. Oacoma has concerns about 11 residences and the sewer system and lift station that services that area. At this time they are unsure of the elevations of the homes and lift station. They have contacted a surveyor to take elevation readings, once elevations are available technical assistance for mitigation can be provided. The town elected to request 300,000 sandbags from the state EOC to allow residents to protect their homes. This may be difficult depending on elevation due to protection heights required, especially from wave action. S-SW winds have a fetch of about 6 miles to develop waves.
10. Hamburg Levee update June 21, 2011:
Observations identified that heavy rains last night at about 2100 hours shut night work down. Site is wet but crews were attempting to re-start work by mid morning if possible. Poly should be complete. Will continue 24/7 operations until critical work at sand boils is complete. High wind has caused some plastic to blow off of the levee and is causing erosion of the levee. The water level has dropped further to 913.5' but all boils are running clear with the exception of one.
11. Omaha-Missouri River RB: Pumps are being installed near Rick's Boatyard capable of pumping up to 300,000 gpm. Overall condition of levee is fair. City plans to extend inverted filter in both directions. An area experiencing seepage has been ringed. A drill rig was observed on the levee near the airport at 1800. After checking, it was determined that the drill team's activities were Corps approved.
12. L611/614-MoRiver LB & Upper Pony Creek Ditch LB: The pump station at the South end of the system has a flap gate that is stuck open so when the pump stops, water flows backwards through the pump. They are planning on closing this with large sandbags.
13. L601-Watkins Ditch RB: The sponsor is currently sandbagging a 700' stretch with only 3' of freeboard. The sandbags will bring decrease of the freeboard to 1'.
14. R616/613-MO River RB and Papillion Creek LB: June 20, Levee is in good shape. Under seepage is occurring without any specific source. No sand boils have been observed. Average freeboard of 4'. Long stretches of R616 have been sandbagged.

15. R520-MO River RB: On June 21 a large boil field (1000' x 20') was monitored with some seepage on the sand berm. No burrows have been observed and the sponsor was advised to contact Emergency Management.

C. Kansas City District:

1. Coast Guard extended river closure from river mile 450 to 550 to all traffic.
 2. No new pl 84-99 breaches in NWK today
 3. One relief well complete out of 6 planned in Lake Contrary near St. Joe.
 4. We will be participating in 2 public meetings tonight - one in North KC and the other in St. Joseph.
 5. Status of Levee work: R471-460 the underseepage berm placement is approximately 78% complete, and L497 the underseepage berm placement is approximately 65% complete.
- -----

D. Northwestern Division Update:

1. [FOUO] In order to improve synchronizing our strategic messaging within USACE, we are going to start including an update of Significant Strategic Engagements with this nightly SITREP. The intent, is to ensure HQUSACE has situational awareness of contacts we are making and the messages we delivered, to ensure synchronization, continuity, and effective of messaging from District through HQUSACE.

NWD Congressional Visits- reference MO River Flooding, scheduled for this week in Washington, DC:

a. [FOUO] Wednesday June 22, 2011: Meetings are scheduled with Senator Chuck Grassley, Senator Tom Harkin, Senator Clair McCaskill, Representative Steve King, Representative Rick Berg, Senator Mike Johanns, Senator Kent Conrad, Senator John Thune and Representative Blaine Luetkemeyer with the NWD Commander and SES.

b. [FOUO] Thursday, June 23, 2011: Senator Roy Blunt, Senator John Hoeven, Senator Jon Tester, Representative Emanuel Cleaver, Senator Tim Johnson, and Representative Kristi Noem with the NWD Commander and SES.

c. [FOUO] The Omaha Tribe may wish to contact HQUSACE in order to discuss the denial by USACE to build an access road to their facility. NWD notified HQ of this potential, and is available if required for input.

2. As the flood waters continue to impact the Upper Missouri Basin and also move toward the Lower Missouri Basin, NWD has made deliberative effort to identify critical infrastructure that could be impacted. The following SharePoint site is available to view that critical

infrastructure. For any questions or concerns related to critical infrastructure, the NWD POC is LTC Stephen Hric stphen.l.hric@usace.army.mil. For critical infrastructure analysis or information, view:

<https://kme.usace.army.mil/CoPs/Emergency-Management/NWD/2011%20NWD%20Floods%20and%20Tornado/Forms/AllItems.aspx?RootFolder=%2fCoPs%2fEmergency%2dManagement%2fNWD%2f2011%20NWD%20Floods%20and%20Tornado%2fMaps%2fNGA%20Produced&FolderCTID=&View=%7bAD74CE06%2dFA03%2d48A4%2dBEAE%2d602CEA804E5F%7d>

3. NWD is not tracking any RFI due to HQUSACE at this time. If there are any outstanding RFI from HQ from NWD, please contact CENWD-EOC@usace.army.mil or MAJ Raymond Love at Raymond.e.love@usace.army.mil. Please do not contact NWO or NWK directly, as they are already heavily engaged with state and local stakeholders, and information flows best when using the chain of command.

E. The links below will help "paint the picture" of the region, and also pre-empt questions and RFI's by providing access to the same real-time data that NWD and its Districts use.

Useful Links:

For current reservoir levels, inflows and releases, visit the Missouri River Basin Water Management website at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

Updated Daily: Details on the reservoirs in the daily bulletin at <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>

Release data for all six reservoirs through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

This ftp site contains an excellent pictorial presentation of the Missouri River Basin system. Please take time to review, as it will help you to better understand the situation and the system we manage.

<ftp://ftp.usace.army.mil/pub/nwd/Mo%20River%20Flooding%206%20June%20update/>

[FOUO] The NWD Common Operating Picture. (Contains National Levy Data base, 1-5 day QPF, Dams, Emergency Management layers, latest critical infrastructure data, etc.)
<https://egis.nwd.usace.army.mil/pls/apex/f?p=200:1:1908605002954834>

[FOUO] For great "pictures from the field" of the flood fight, projects, etc visit the MICA (Mobile Information Collectors Application) website:
<https://gearportal.usace.army.mil/sandboils/listing.html>

Select Omaha Flood Fight - "Show Map in Portal" Button.

To use Google Earth - on the MICA Dashboard hit the button "right click to copy to Network link" with a right click. Select Copy Shortcut option.

Open Google Earth and Right click under my places and select Add - scroll down to add a Network link.

Give it a name and paste the short cut you copied from the MICA dashboard. Google should auto refresh the data on a 5 min interval.

For the most accurate and efficient flow of information, please direct and questions, concerns, or comments to the NWD EOC, or to the undersigned. The NWD RCO Battle rhythm is also attached, and it is the most current as of 21 June 2011.

UOC: please acknowledge Receipt.

V/R

[REDACTED]
Contingency Operations Officer
Readiness and Contingency Operations
Northwestern Division
US Army Corps of Engineers
Desk: [REDACTED]
Cell: [REDACTED]

[REDACTED]@usace.army.mil

[REDACTED]e@usace.army.smil.mil

Emergency Satellite Phone: [REDACTED] Emergency Cell: [REDACTED]

FOR OFFICIAL USE ONLY [FOUO]- This email and any attachments may contain information that is protected from disclosure by the Privacy Act of 1974 and should be viewed only by those with an official "need to know." If you are not the intended recipient, be aware that any disclosure, copying, distribution or use of the content of this information is prohibited. If you have received this communication in error, please notify me immediately by email, delete the original message, and destroy any hard copies you may have created. Any misuse or unauthorized disclosure may result in both civil and criminal penalties.



US Army Corps of Engineers®

Current Stage NWS 5-Day Forecast Peak

Gage	Stage	Date
Williston	30.57	Steady
Omaha	34.48	Steady
Nebraska City	26.93	Steady
Brownville	43.96	21-Jun
Rulo	26.12	25-Jun

Freeboard

> 5'
2' - 5'
< 2'
Overtopping
Breached

6/21/2011 10:00

Missouri River Federal Levee	Stream Gage Location	Likely Range of Stage with normal precipitation (ft)	Overtop Stage Previous Estimate	Overtop Stage FreeBoard Survey	Current FreeBoard (feet)	FreeBoard w/ NWS 5-Day Forecast (feet)
Williston Levee	Williston	30	n/a	32	1.4	1.4
Omaha Levee D/S 275	Omaha	34	40	38	3.5	3.6
Omaha Flood Wall	Omaha	34	41	41	6.5	6.6
Council Bluffs Ind Levee	Omaha	34	n/a	36.8	2.3	2.4
Council Bluffs Fed Levee	Omaha	34	40	40.2	5.7	5.8
L627	Omaha	34	36	38	3.5	3.6
L624	Omaha	34	35	38	3.5	3.6
L611-614	Omaha	34	35	38	3.5	3.6
R616	Omaha	34	35	36.6	2.1	2.2
R613	Omaha	34	35	36.8	2.3	2.4
L601	Nebraska City	27	25.4	29	2.1	2.1
L594	Nebraska City	27	26	30	3.1	3.1
L575	Nebraska City	27	27	27	BREACHED	BREACHED
R573	Nebraska City	27	27	28.2	1.3	1.3
R562	Nebraska City	27	25.5	28.7	1.8	1.8
R548	Brownville	43	44	43.9	0.1	0.1
L550	Brownville	43	42.8	43.7	0.3	0.3
L536	Brownville	43	44.3	43.9	0.1	0.1
R520	Rulo	25.5	27	30	3.9	3.3

*NOTE: FreeBoard survey values may not include all low areas. Overtopping could occur at stages approximately 1 foot below surveyed value.

Missouri River Basin Stages

21 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
A	Bismarck	16	18.8	150 kcfs 20.6	June 19	
B	Pierre	13	19.8	150 kcfs 18.7	June 7	
C	Yankton	20	25.1	150 kcfs n/a	June 14	
D	Sioux City	30	34.0	170 kcfs 35	June 15	44.28 (1952)
E	Decatur	35	38.6	175 kcfs 40	June 15	43.5 (1943)
F	Blair	26	32.2	175 kcfs 32	June 15	33.5 (1952)
G	Omaha	29	34.4	175 kcfs 34	June 16	40.2 (1952)
H	Nebraska City	18	26.8	200 kcfs 27	June 16	27.19 (1993)
I	Brownville	33	44.0	205 kcfs 43	June 16	44.3 (1993)
J	Rulo	17	26.1	210 kcfs 25.5	June 17	26.63 (2010)
K	St. Joseph	17	24.6	215 kcfs 27	June 17	32.07 (1993)
L	Atchison	22	27.6	215 kcfs 30	June 17	31.63 (1993)
M	Leavenworth	20	22.8	215 kcfs 27	June 17	35.34 (1993)

Missouri River Basin Stages

21 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages		Projected Date **	Record Stage (Year)
N	Kansas City	32	26.4	220 kcfs 30	350 kcfs 39	June 18	48.87 (1993)
O	Sibley	22	25.1	220 kcfs 28	350 kcfs 33	June 18	40.6 (1952)
P	Napoleon	17	21.9	220 kcfs 25	350 kcfs 29	June 18	28.86 (2007)
Q	Waverly	20	24.8	230 kcfs 27	370 kcfs 31	June 18	31.15 (1993)
R	Miami	18	23.2	235 kcfs 26	370 kcfs 30	June 19	32.6 (1993)
S	Glasgow	25	26.1	250 kcfs 32	410 kcfs 37	June 19	39.5 (1993)
T	Boonville	21	22.1	260 kcfs 27	420 kcfs 33	June 19	37.1 (1993)
U	Jefferson City	23	21.8	260 kcfs 27	430 kcfs 35	June 19	38.3 (1993)
V	Chamais	17	17.3	290 kcfs 24	450 kcfs 29	June 19	33.3 (1993)
W	Gasconade	22	24.0	300 kcfs 30	470 kcfs 35	June 19	39.6 (1993)
X	Hermann	21	21.6	300 kcfs 27	470 kcfs 33	June 20	36.97 (1993)
Y	Washington	20	18.1	300 kcfs 23	470 kcfs 32	June 20	35.4 (1993)
Z	St. Charles	25	24.6	300 kcfs 28	470 kcfs 37	June 20	40.04 (1993)

[REDACTED] NWO

From: [REDACTED] NWK
Sent: Tuesday, June 21, 2011 11:15 PM
To: Farhat, Jody S NWD02
Cc: MRJIC; Blechinger, Erik T NWO
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Jody and Erik,

I appreciate the assistance with this matter and will respond to Mr Stephens as suggested.

[REDACTED]
-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 1:53 PM
To: [REDACTED] NWO; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK
Cc: MRJIC; Blechinger, Erik T NWO
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

I agree that the response should come from MRJIC to ensure consistent messaging. Steve, you could just reply that the email has been forwarded to MRJIC for response. I know the JIC is handling many email comments and best to let them handle it. If they need specific input from me, they'll come ask for it.

Jody

-----Original Message-----

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 10:15 AM
To: [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWK
Cc: Farhat, Jody S NWD02; MRJIC
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

I would recommend a response from Jody and/or the MRJIC. This would ensure a uniform message up and down the basin. All of these same issues were brought up in the upper basin also so it is not unique to this individual.

[REDACTED]
-----Original Message-----

From: [REDACTED] NWK
Sent: Tuesday, June 21, 2011 9:43 AM

To: [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWO; [REDACTED]
NWO; [REDACTED] NWK; [REDACTED] NWO

Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Yesterday I received the email message from Mr Stephens. Below is a draft response to Mr Stephens email note to me. Please feel free to edit as you see fit to help craft our important response message. Do you see merit in also sending to the STL Post (I did verify it was included in the 12 June editorial section)?

Mr. Stephens,

I do appreciate you taking the time to write me a letter and for expressing your concerns regarding this historic Missouri River flood event. As you might expect, I do not agree with your assumptions and would like the opportunity to share some information (thoughts?) with you.

Background for current situation:

- First, it is important to recognize that each flood is unique. For example, the 1993 flood you referenced resulted from extensive and repeated high rainfall events on the lower plains and across Missouri. Uncontrolled flows from rivers such as the Chariton, Grand, and Platte contributed extensively to that flood event. To date the 2011 event has been the result of historic snow and rain events in the upper basin. (is all this correct?)
- 2010 was the third highest water year on record for the entire basin. As the 2010 flood subsided late in the summer, the Corps began to release high levels of water from the six mainstem reservoirs throughout the winter. The releases were slowed in January due to significant ice development and the potential for ice jam flooding. Releases were increased once that threat had passed.
- On January 28, 2011, the reservoir system had full flood capacity for this year's runoff season.
- On May 1, the Corps projected summer releases of 57,500 cfs from Gavins Point Dam; we were on schedule to evacuate the runoff from the record snowpack.
- Then came the extraordinary rainfall during May 2011 - the equivalent of 1 years rain in a two week period! The rains in Montana, the Dakotas and Wyoming resulted in 3 times the monthly average runoff (10.5 million acre-feet vs 3.3 MAF). This was the second highest single month of runoff within the basin since 1898 - the record is 13.2 MAF in April of 1952.
- The reservoir system is operating as planned and designed. In fact, imagine the scenario if the mainstem reservoirs were not in place or allowed to run uncontrolled. The balance is to evacuate water from the entire system as rapidly as possible while recognizing down river constraints.

Operation:

- Since Lewis and Clark returned from their expedition, the Army Engineers have had very close ties to the Missouri River. Over the years, the U.S. Army Corps of Engineers has been charged by Congress to remove snags, protect banks, construct navigation channels and build flood risk management structures (levees and dams) on the Missouri River to provide social and economic benefits to the nation. Some of these development activities on the Missouri River have come at the expense of the river's native fish and wildlife.
- The Corps operates the Missouri River as a system for eight Congressionally authorized purposes (alphabetically) -- fish & wildlife, flood control, hydropower, irrigation, navigation, recreation, water supply, and water quality.
- There are two large water resource projects on the Missouri River - the six mainstem dams and the Bank Stabilization and Navigation Project(BSNP).

- The US Fish and Wildlife Service gave the Corps a Biological Opinion (BO) in 2000 (amended in 2003) which stated our operations of the Missouri River jeopardized the three federally listed species - pallid sturgeon, least tern, and piping plover.
- With local, state and federal input, the Missouri River Mainstem Reservoir System's Master Water Control Manual was approved in 2004 and updated in 2006. This is what guides the operation of the Missouri River for the eight authorized purposes and keeps the Corps in compliance with the BO.

Spring Pulse:

- In response to the needs of the native river fish on the Lower Missouri River, especially the endangered pallid sturgeon, March and May spring pulses from Gavins Point Dam are run when certain conditions exist - adequate water in the reservoirs, high flow limits would not be exceeded downriver.
- Pallid sturgeon need higher spring flows to cue spawning and to link them to other areas of the river during their life cycle. The spring pulse from Gavins Point Dam, located on the Nebraska and South Dakota border, is meant to replicate a natural seasonal rise that prompts the species to spawn.
- Pallid sturgeon are an ancient species protected by the Endangered Species Act.
- Spring pulses created spring rises on the downstream Missouri River. These pulses are designed to mimic the much larger, historic spring rises on the Missouri River, which still occur naturally as one proceeds further down the Lower Missouri River.
- The environmental benefits of the created spring rises are, therefore, to be more significant in the upper 200 miles of the Lower Missouri River from Gavins Point Dam to about Omaha, Nebraska.
- The March 2011 pulse was to be 5,000 cubic feet per second minus the James River flow near its confluence with the Missouri upstream of Sioux City, Iowa. However, the James River was nearly 25,000 cfs (plains snowpack melt) and the Missouri River was already above the downstream flow limits set to reduce or eliminate farmland flooding at Omaha, Nebraska City and Kansas City, Mo. Result was a natural spring pulse from uncontrolled tributaries and not a created pulse. Same held for the May 2011 pulse.

Finally, the Corps does take very seriously its job of operating the Missouri River system to meet the eight authorized purposes. It should be noted that the Corps projects on the Missouri River have provided benefits to the nation in categories such as hydropower, flood risk management, recreation and navigation valued at nearly \$2 billion annually; with a total annual cost to operate these projects of approximately \$120 million. The total Corps investment on the Missouri River mainstem to date has been just over \$4 billion.

Sincerely,

[REDACTED]
Senior Program Manager
Missouri River Recovery Program
US Army Corps of Engineers
O: [REDACTED] (Kansas City)
O: [REDACTED] (Omaha)
C: [REDACTED]
[REDACTED]@usace.army.mil

-----Original Message-----

From: [REDACTED] [mailto:[REDACTED]]
Sent: Monday, June 20, 2011 9:47 AM
To: [REDACTED]
Subject: Missouri River Recovery Plan

Mr. Fischer,

Below is a letter that I sent to the St. Louis Post Dispatch, and they published on Sunday June 12, about the Corps mismanagement of the Missouri river. A would appreciate your comments on the letter. I think more and more the public is beginning to understand the abuse of power given to the Corps by congress by causing more and larger floods than would normally occur.

Corps of Engineers wrong again

Last week the Corps of Engineers announced that over the next few weeks they will be releasing up to 150,000 CFS of water from the Gavins Point reservoir on the upper Missouri river, which will cause record flooding down stream. Their explanation for this release was due to heavy rainfall and heavy snow pack in the upper Northern area. Naturally, as always, the public listens and absorbs what the Corps puts out as gospel. However, the farmers and people who have had experience with the Corps over many years fully understand the true reasons for some but not all floods on the Mississippi and Missouri rivers.

For several years now the Corps has wanted to create flooding by rising the Missouri river level up to 3 feet above flood stage twice each spring to improve spawning of the spoonbill/paddlefish.. The crops have been unable to do this as planned every year due to insufficient water in the reservoirs on the upper Missouri river. Therefore they have been holding as much water as possible in those reservoirs saving it to be able to create the spring floods as planned. Well they got burnt again, as they did in 1973/1993. As the heavy rains came with the reservoirs already full or nearly full, they have to release massive amounts of water during what might have been a normal flood event. Most likely there would have been some flooding without the Corps expert assistance. This is but one of the many floods we can attribute to the Corps mismanagement of the rivers.

Harold L. Stephens

[REDACTED]
West Alton, Mo. 63386
[REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: Williamson, Eileen L NWO
Sent: Tuesday, June 21, 2011 7:58 PM
To: Farmer, Monique L NWO; [REDACTED] NWD; Farhat, Jody S NWD02; [REDACTED] NWO; Oldham, Margaret NWO; [REDACTED] NWO
Subject: RE: Flood_Fight_Talking_Points_21June11.docx (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

May want to add the following TP on Inundation Maps - or a revised version.

Updated inundation maps for the areas from Gavins Point to Rulo, NE will be made available within the next 24-hours. The increased releases will not change the footprint for the areas of inundation but the depth levels will differ.

-----Original Message-----

From: Farmer, Monique L NWO
Sent: Tuesday, June 21, 2011 7:45 PM
To: [REDACTED] NWD; Farhat, Jody S NWD02; [REDACTED] NWO; Oldham, Margaret NWO; [REDACTED] NWO; Williamson, Eileen L NWO
Subject: Flood_Fight_Talking_Points_21June11.docx (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

All:

I have attached the updates to the TPs. Changes are highlighted in yellow.

V r,
[REDACTED]

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

NWO

From: Farmer, Monique L NWO
Sent: Tuesday, June 21, 2011 7:45 PM
To: [REDACTED] NWD; Farhat, Jody S NWD02; [REDACTED] NWO;
Oldham, Margaret NWO; [REDACTED] NWO; Williamson, Eileen L NWO
Subject: Flood_Fight_Talking_Points_21June11.docx (UNCLASSIFIED)
Attachments: Flood_Fight_Talking_Points_21June11.docx

Classification: UNCLASSIFIED
Caveats: NONE

All:

I have attached the updates to the TPs. Changes are highlighted in yellow.

V r,

Monique

Classification: UNCLASSIFIED
Caveats: NONE

Key Messages and Talking Points

ISSUE: Repeated rounds of heavy rain (300 to 600 percent of normal), coupled with record plains snowpack have pushed the Missouri River Reservoirs to very high levels nearly filling the reservoirs, reducing any flexibility built into our operations for 2011 and requiring aggressive and historic releases out of the main stem reservoirs. Weather conditions continue to change rapidly and we use real-time operations and the best information available at the time to determine our release schedules to keep pace with the rapidly changing weather conditions. High releases will continue through at least mid-August to evacuate stored floodwater and get the reservoirs to a manageable level. We are communicating those changes as soon as new information becomes available.

BACKGROUND: The Omaha District provides timely and effective technical advice and direct assistance before and during flood events with a goal of reducing flooding risks. In any disaster, our top priorities are: Support immediate emergency response priorities; Sustain lives with critical commodities, temporary emergency power and other needs; and, initiate recovery efforts by assessing and restoring critical infrastructure.

KEY/COMMAND MESSAGES

1. PUBLIC SAFETY

- Protecting lives is our number one priority. People living along the Missouri River and Platte River basin are encouraged to have plans to evacuate, protect their possessions and property.
- The Missouri River main stem system is operating as designed. Without the proper operation of the system and our emergency response efforts, more lives and property would be at risk.
- We have a vigilant dam safety program. Our dams are inspected and maintained on rigid schedules and are well-prepared to handle the floodwaters. This is what they were designed to do. Our dams are structurally sound and are not experiencing any symptoms that would indicate potential failure.
- Safety is a shared responsibility among federal, state, local, Tribal and private partners and we communicate these risks so people can make well-informed decisions about their safety. Safety risks associated with flooding events include: high water on levees, flooded roads, high flowing streams and environmental issues such as well contamination.
- The Corps coordinates with local officials and communicates with the public on the condition of Corps owned dams and the Missouri River system.
- We encourage the public to become educated and be aware of local conditions. Planning and preparedness may include purchasing weather alert radios, keeping emergency supplies on hand, and determining personal evacuation routes.

2. TIMELY RESPONSE & PREPAREDNESS

- We take our responsibilities seriously and are working to do everything within our ability to reduce the risks from these flood events on the Missouri River and Platte River Basin and provide assistance to the communities impacted by them.
- The Corps has a well-trained team of emergency response personnel engaged at critical spots along the Missouri River and Platte River Basin with the equipment and materials available for this flood fight.
- In coordination with Tribal governments and States, the Corps has supplied millions of sandbags, pumps, and thousands of feet of Hesco bastions for the construction of temporary levees to help communities prepare for the floodwaters. This is a national effort with many additional supplies coming in from across the country.

3. ASSISTANCE TO COMMUNITIES AND TRIBAL GOVERNMENTS

- Under the authority of Public Law 84-99 and the Flood Control and Coastal Emergencies appropriations, Corps emergency management personnel collaborate with local, county, state, federal and tribal officials to ensure coordinated efforts in flood risk reduction and emergency response activities.
- When disasters occur, it is not just a local Corps district or office that responds. Personnel and other resources are mobilized across the country to carry out our response missions.

4. EFFECTIVE COMMUNICATION

- State and local emergency management teams will be the point of contact for residents needing information about flooding in their area.
- We are using all available communication tools to keep the public informed of our emergency response operations, including:

- o Internet <http://www.nwo.usace.army.mil> - click the flooding link/maps are here and are shared with local emergency management offices
- o OmahaUSACE on Facebook, Twitter, Flickr and YouTube
- o USACE, Kansas City District Facebook page: <http://www.facebook.com/usace.kcd>
- o USACE, Kansas City District Twitter page: http://twitter.com/KC_USACE
- o USACE, Kansas City District website: <http://www.nwk.usace.army.mil/>
- o OperationMightyMO on Facebook at: <http://www.facebook.com/OperationMightyMO>
- o The Missouri River Joint Information Center can provide citizens in communities living along the Missouri River basin with accurate, timely responses to their questions. The local contact number is: (402) 996-3877. The toll free number is: (877) 214-9110
- o Or, email us at MRJIC@usace.army.mil

Missouri River Basin

- Releases from the Missouri River dams last fall and throughout the winter of 2010 were above normal to complete the evacuation of the 2010 floodwaters. The full flood control capacity of the main stem reservoir system was available at the start of the 2011 runoff season.
- Each flooding event is unique. Varying factors such as rainfall location along the rivers and tributaries, and snowpack melt off patterns shape the characteristics of each flood. All floods are different and we caution people against trying to make comparisons between this flood and floods from years past. This is the Flood of 2011.
- Our hearts go out to those communities impacted by floodwaters and we will do everything in our ability to provide assistance. We are committed to this flood fight.
- We are in flood fights all along the Missouri River basin and are operating the river for flood risk reduction. We have not operated the system under the Endangered Species Act in 2011 because of high water levels.
- Our goal is to evacuate reservoirs to provide time for damage assessment and repair prior to next year's runoff season. This will be a long and sometimes frustrating and intense effort, but we are committed to working together to avoid the loss of life, minimize damages and help communities. Flooded areas are expected to be inundated for several months. Moving water out of the reservoirs is essential to prevent the spillways from being overtopped which would make flooding much worse.
- The Missouri River main stem Reservoir System, which includes six dams, is operated in accordance with the Missouri River Master Manual. The Master Manual is a water control plan that helps guide how much water should be released, when, and for how long from our reservoirs for the benefit of the entire Missouri River basin. It is based on more than 100 years of historical runoff records (1898-2004).
- The dams on the Upper Missouri are fully functional and operating as designed. The system is protecting the public from unregulated flows. Unregulated flows – which occur when flood waters flow uncontrolled in a spillway -- would result in significantly more damage.
- There is no evidence to suggest an emergency situation at any of our dams, and all projects are operating within their design parameters.
- We have a comprehensive and aggressive federal levee safety program. It includes an annual inspection for adequate maintenance and a more rigorous structural review every five years.
- As soon as an issue is identified on one of our levees, the Corps immediately gets a team on site with the local sponsor to assess the situation. We are aggressively monitoring and evaluating inundated areas.
- Releases from Fort Peck will remain at 60,000 cfs for the time being. Releases from Garrison will stay stable at 150,000 cfs for the foreseeable future. In response to high inflows between Oahe and Big Bend, Oahe's releases have been reduced to 150,000 cfs and will return to 160,000 cfs as soon as conditions at Big Bend permit. Releases from Big Bend will rise to 165,000 cfs tomorrow and remain at that level till the end of June. Fort Randall releases have temporarily reduced to 138,000 cfs and will incrementally ramp up 157,000 cfs. Gavins Point will increase levels to 160,000 over a two-day period, increasing by 5,000 per day. The 160,000 cfs level will be attained by Thursday and remain at that level through August.

NWO

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 7:29 PM
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; [REDACTED] NWO; [REDACTED] HQ02
Subject: Flood Update #97 (UNCLASSIFIED)
Attachments: NWO Flood Fight Materials 21 Jun.xlsx; PrecipReports21.xls; tempoutlook21_june.xls; 24hrQPFthru12Z21.jpg; Missouri River Basin Water Management Situation Report 6-21-11.docx; ObservedPrecip_20Jun2011.jpg; Day1QPF_21Jun2011.gif; Day2QPF_21Jun2011.gif; Day3QPF_21Jun2011.gif; PrecipReport_21Jun11.xls; TempOutlook_21Jun11.xls; DailyBulletin_21Jun2011.pdf; MainstemBulletin_21Jun2011.pdf; MR_Levee_Freeboard_062111.pdf

Classification: UNCLASSIFIED

Caveats: NONE

****EMERGENCY OPERATIONS****

1. Situation:

Past 24 hour precipitation brought widespread 1.00 to 2.00 inch rains that fell across part of the Missouri River Basin from Omaha through northern South Dakota during the 24-hour period ending at 7 AM Tuesday. Amounts were lighter south of Omaha through Missouri, and across North Dakota into Montana, but averaged about 0.50 inches. Some of the higher rainfall totals included: In Nebraska, 3WSW Hershey 7.25", 1W Sutherland 5.50", Ainsworth 3.88", Thedford 1.83". In South Dakota, 11S Burke 8.00", 5W Sioux City 3.43", Chamberlain 3.76", Huron 2.45", Sioux Falls 1.99", Brookings 1.90". In North Dakota, Bismarck reported 0.84" and Huron 0.55".

A strong low pressure system moving across Nebraska during the afternoon and evening caused the widespread rains, and also created severe storms across a good part of Nebraska and South Dakota. To the northwest of the low track, 2 to 5 inch rains were common from north central Nebraska through central South Dakota.

An updated reservoir forecast was posted on the web this afternoon. Heavy rain over South Dakota and northern Nebraska has forced several changes to planned releases from the lower 4 reservoirs.

Releases from Oahe reservoir were reduced from 160,000 cfs to 150,000 cfs this morning due to very high flows on the Bad River, which enters the Missouri River just downstream of Pierre, SD. The release reduction was necessary to manage the Big Bend pool level, Big Bend reservoir has very little flood control storage. Releases from Oahe will be returned to the 160,000 cfs rate as soon as flows on the Bad River recede, likely within the next day or two.

Big Bend releases were increased from 160,000 cfs today to 163,000 cfs and will be further increased to 165,000 cfs tomorrow. They will remain at that level for a week to 10 days to help manage the Big Bend pool level.

Releases from Fort Randall were reduced 5,000 cfs this morning, to 138,000 cfs, due to expected high inflows into Gavins Point reservoir from last night's rain. Releases will eventually be stepped up to approximately 157,000 cfs.

Releases from Gavins Point dam will be increased to 155,000 cfs tomorrow morning (Wednesday) and to 160,000 cfs on Thursday morning. No additional release increases are planned at this time.

Montana:

Wolf Point, MT - Tech team traveled to Wolf Point to provide technical and potentially direct assistance to the city to advise them on protecting their finishing ponds. Erosion is expected to continue progressing at this site. However, at this time, erosion is not expected to progress to a point where it would threaten the integrity of the polishing lagoon berm because discharges are expected to continue to recede, velocities do not appear to be excessive at this time and there is approximately 150 ft between the corner of the lagoon berm and the river. Erosion progress is being carefully monitored by city staff using numbered lathe stakes. If erosion progresses to a point where failure is imminent, further consideration should be given to adding riprap protection to prevent failure. The site may be a potential candidate for repair and stabilization under USACE Section 14 Study authority which includes a 65/35 USACE/sponsor cost share.

Iowa:

Pottawattamie County submitted a Direct Assistance request to install water seepage blankets in 12 locations (approx 2 miles), and assistance in plugging an outflow pipe at the 28th street pump house, Council Bluffs, IA along the Missouri River Levee L611-614.

Missouri River Levees:

L536/550-Turkey Creek: On June 20, at L550, a large sandbag was dropped by helicopter however, there was an equipment malfunction. More were planned to be dropped today. Observations today at L536 are that the levee has eroded approximately half of the way through crest and has not failed as of this morning. The erosion has slowed. The sponsor of L550 requested an additional 150 large sandbags and slings. The sponsor picked them up from the warehouse this morning.

Lake Waconda: The landside toe of the levee, in certain sections, was saturated and some ponding was observed. Team recommended to the sponsor that an inverted sand filter be constructed at the seepage location. Multiple punctures in the clay liner of the lake were identified, typically 1-2' in diameter. The team recommended that a differential head between the river and lake of 6' be maintained. Discussion with sponsor made it apparent that maintaining the 6' pressure differential between the lake and the river will cause some homes to flood. The team strongly recommended maintaining the 6' differential. Team also provided instruction for how to properly ring sand boils. It was recommended that ponding water be allowed to pond. To prevent erosion due to wave wash team recommended placing riprap or plastic along riverside face.

R562-Peru: Yesterday, there was no observed change in the piping issue, which was still flowing clear at a rate of 10 gpm. No action will be taken unless the embankment shows signs of distress or the river level drops. The river level is down 1'. On June 21, the team recommended a splash pad for the burrow hole flowing water and that the sponsor should request assistance from the National Guard.

R548- MO River and Little Nemaha: Yesterday, R548 #2 had between 1-1.5' of freeboard. The local sponsor has sandbagged low spots both North and South of Cooper Nuclear Station. The Corps recommended that the sponsor continue to sandbag low areas. However, sponsor has instead stockpiled sandbags with plans to continue placing sandbag if river rises. The sponsor is doing the minimal amount of work and not being proactive. An issue with a flap gate has been fixed with an inflatable bladder and is working well.

2. Weather:

2.a. Future Precipitation:

Day 1 QPF (from 700 hours Tuesday to 700 hours Wednesday): The low pressure system that brought the heavy rains to the basin will begin moving to the east, reaching northern Iowa by Wednesday morning. Heavy wrap-around precipitation is still possible across eastern South Dakota where 1 to 2 inches is possible. See attached.

Day 2 QPF (from 700 hours Wednesday to 700 hours Thursday): The low pressure system will continue moving east, reaching the Great Lakes by Thursday morning. Lingering showers may bring 0.25" rains to eastern South Dakota, but the bulk of the Missouri River Basin will remain dry. See attached.

Day 3 QPF (from 700 hours Thursday to 700 hours Friday): Another storm system will begin to push in from the west across the northern Rockies. Low pressure developing along the lee of the Rockies will bring rain chances to eastern Montana. However rain amounts should remain in the 0.25" to 0.50" range. See attached.

Winds Impacting Fort Peck, Williston, Garrison, and Oahe:

Fort Peck: Light northwest winds at 5-15 mph today, becoming light and northeast overnight. On Wednesday, wind stay light (5-10 mph) and become southeast by the afternoon.

Williston: Northeast winds at 5-15 mph today, staying light and northeast overnight.

Wednesday winds are light and north, becoming north northeast by Wednesday afternoon.

Garrison: Today's winds will be north northeast at 5-15 mph and become light from the north overnight. By Wednesday afternoon, north northeast winds increase to 10-15 mph with gusts up to 15-25 mph.

Oahe: North northwest winds at 25-35 mph with gusts 35-40 mph today. Overnight northwest winds decrease to 15-25 mph. Wednesday morning, northwest winds gust up to 30 mph, and stay 15-25 mph from the northwest through Wednesday afternoon.

2.b Temperature forecast:

Forecast high temperatures will be close to the normal range in the upper 70s to lower 80s Wednesday and Thursday. Slightly below normal temperatures can be expected Friday into Saturday. A trend toward above normal temperatures is expected next week. See attached.

3. Hydro Status:

3.a. River (Flood Stage/Current Stage/Forecast/Date of Peak: Peak Stage) Montana

- * Yellowstone River at Billings/13.0/9.6/slow rise/Jun 25: 11.0'
- * Yellowstone River at Forsyth/10.0/9.18/steady, then rising/Jun 26: 10.2'
- * Yellowstone River at Miles City/13.0/11.84/steady, then rising/Jun 26: 12.5'
- * Yellowstone River at Glendive/53.5/51.33/receding/
- * Yellowstone River near Sidney/19.0/17.16/receding/
- * Gallatin River near Logan/8.0/8.03/steady, then rising/Jun 23: 9.1'
- * Missouri River near Toston/10.5/10.22/steady, then rising/Jun 23: 10.6'
- * Missouri River near Wolf Point/13.0/13.84/slow recession/
- * Missouri River near Culbertson/19.0/17.09/steady, then slow recession/
- * Poplar River near Poplar/15.5/12.50/rising/Jun 22: 13.0'
- * Milk River at Nashua/20.0/24.2/receding/

Wyoming

- * North Platte River at Saratoga/8.5/9.77/steady/
- * North Platte River nr Sinclair/9.0/10.42/steady, then slow recession/
- * Laramie River at Laramie/5.0/5.56/slow recession/

North Dakota

- * Missouri River at Williston/22.0/30.57/steady, then slight recession/
- * Missouri River at Bismarck/16.0/18.87/steady, then rising/Jun 22: 18.9'
- * James River at Jamestown/12.0/11.18 (1,700 cfs)/receding/

South Dakota

- * Missouri River at Pierre/13.0/19.7/slight recession/
- * Missouri River near Greenwood/30.0/38.04/steady/
- * Missouri River near Gayville/55.0/56.14/steady/
- * Bad River at Fort Pierre/21.0/21.91/rising/Jun 21: 21.2'

Iowa

- * Big Sioux River at Akron/16.0/16.92/rising/Jun 25: 20.1'
- * Nishnabotna River near Hamburg/23.0/20.02/rising/Jun 22: 24.0'

Nebraska

- * North Platte River near Mitchell/7.5/9.29/steady/
- * North Platte River at North Platte/6.0/7.43/steady, then rising/June 22: 7.8'
- * Missouri River at Sioux City/30.0/34.11/rising/
- * Missouri River at Decatur/35.0/38.75/rising/Jun 22: 39.0'
- * Missouri River near Blair/26.5/32.27/rising/Jun 23: 32.7'
- * Missouri River at Omaha/29.0/34.35/rising, then receding/
- * Missouri River at Plattsmouth/26.0/35.93/rising/Jun 21: 36.04'
- * Missouri River at NE City/18.0/27.0/rising/Jun 21: 27.3'
- * Missouri River at Brownville/33.0/43.97/steady, then rising/Jun 22: 44.4'
- * Missouri River at Rulo/17.0/26.09/rising/Jun 25: 26.7'

3.b. Reservoirs:

Tributary Reservoirs:

Pipestem Reservoir, (ND) - fell 0.16' to elevation 1482.96 ft-msl. Inflows are near 170 cfs and releases are 600 cfs. 60.6% of the flood pool is occupied.

Jamestown Reservoir, (ND) - fell 0.09' yesterday to elevation 1443.50 ft-msl. Inflows are approximately 150 cfs. Releases were reduced from 1,200 cfs to 1,100 cfs at 8:30 pm on June 20 due to rainfall in the area. Releases will remain at 1,100 cfs until the threat of heavy rainfall diminishes. The combined Jamestown/Pipestem release is 1,700 cfs. 37.3% of the flood pool is occupied.

Heart Butte, (ND) - Reservoir fell 0.09 ft yesterday with 4.2% of its flood control pool occupied. Pactola (SD) rose 0.20 ft yesterday with 2.7% of the flood pool occupied. Shadehill (SD) rose 0.05 ft yesterday with 2.6% of the flood pool occupied.

Yellowtail, (MT) - rose 0.34 ft to elevation 3637.12 ft-msl with inflows of 17,377 cfs and releases of 15,386 cfs. 92.1% of its multipurpose pool is occupied.

Tiber, (MT) - rose 0.34 ft to elevation 3005.84 ft-msl. Inflows were 4,421 cfs and releases are 758 cfs as the USBR stores water to help reduce inflows to Fort Peck. 63.1% of its flood pool is occupied.

Clark Canyon, (MT) - rose 0.43 ft to elevation 5551.41 ft-msl with inflows of 1,493 cfs and releases of 290 cfs as the USBR stores water to help reduce inflows to Fort Peck. 35.5% of its flood control pool is occupied.

Canyon Ferry, (MT) - rose 0.64 ft to elevation 3796.13 ft-msl with inflows of 25,950 cfs and releases of 16,282 cfs. 98.4% of its multipurpose pool is occupied.

Glendo, (WY) - rose 0.09 ft to elevation 4638.98 ft-msl with inflows of 8,298 cfs and releases of 7,624 cfs. 18.6% of its flood control pool is occupied.

Missouri River Mainstem Reservoirs: (Water Management SITREP is attached) Following is a link to the Mainstem regulation forecast. Refresh to obtain the most recent copy if you keep this link open, <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>. Notes for data below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

Fort Peck Dam (MT)

6/20 Pool Elev: 2251.9 ft-msl
24-hr change: -0.1'
6/20 Ave Inflow: 50,000 cfs
6/20 Ave Release: 61,800 cfs
6/21 Scheduled Release: 60,000 cfs

Garrison Dam (ND)

6/20 Pool Elev: 1854.2 ft-msl
24-hr change: 0.2'
6/20 Ave Inflow: 188,000 cfs
6/20 Ave Release: 150,200 cfs
6/21 Scheduled Release: 150,000 cfs

Oahe Dam (SD)

6/20 Pool Elev: 1618.9 ft-msl
24-hr change: 0.3'
6/20 Ave Inflow: 201,000 cfs
6/20 Ave Release: 160,300 cfs
6/21 Scheduled Release: 160,000 cfs

Big Bend Dam (SD)

6/20 Pool Elev: 1419.9 ft-msl
24-hr change: 0.5'
6/20 Ave Inflow: 172,000 cfs
6/20 Ave Release: 158,900 cfs
6/21 Scheduled Release: 160,000 cfs

Fort Randall Dam (SD)

6/20 Pool Elev: 1366.3 ft-msl
24-hr change: 1.2'
6/20 Ave Inflow: 200,000 cfs
6/20 Ave Release: 143,500 cfs
6/21 Scheduled Release: 143,000 cfs

Gavins Point Dam (NE-SD)

6/20 Pool Elev: 1207.5 ft-msl
24-hr change: -0.1'
6/20 Ave Inflow: 150,000 cfs
6/20 Ave Release: 150,000 cfs
6/21 Scheduled Release: 150,000 cfs

4. Emergency Operations:

4.a.1 Nebraska:

Cass County, Lake Waconda, NE - USACE Technical team identified four areas of concern: multiple active sand boils, large ponding/seepage area landward of levee. Recommendations for addressing the concerns were provided to the sponsor and the Cass County EM. The potential for a levee failure remains.

A technical and direct assistance request for elevating the roadway to the Tribal Casino on the Reservation land was submitted. USACE communicated to the Tribal member that the Tribal Casino did not meet the criteria for Critical Infrastructure protective measures. EM Chief and NWO Tribal Liaison were notified of communication.

4.a.2 Montana:

Ft. Peck Dam, MT - Continuing to monitor scour along the length of the wing wall.

4.a.3 North Dakota:

Fort Yates, ND - Standing Rock Sioux Tribe (SRST): North side complete of causeway and South side work is 15% complete. Work has been impeded due to heavy rains in the area.

4.a.4 South Dakota:

Pierre/Ft. Pierre, SD - Increase in tail water surface elevation due to increase discharge (150K to 160K cfs). The City of Ft. Pierre requested two additional pumps. The District does not have any pumps available at this time.

Dakota Dunes, SD - Continuing to monitor erosion along South levee, the sponsor has armored the levee slope with rip-rap to mitigate erosion damage.

Oahe Dam, SD - The relief well road remains closed due to high water (160K flows).

Big Bend Dam, SD - Service road to relief wells is still under water (160K flows).

Fort Randall Dam, SD - The repair of the concrete slab spalling work is being completed by project personal. Project personnel also plugged the drain holes in the sidewalls of the spillway to reduce backflow of water surcharging the groundwater and water spouting out the piezometer holes and slab joints adjacent to the spillway.

Oacoma, SD - has requested technical assistance, Chamberlin has not formally requested assistance to date. [REDACTED] met with Lyman County EM and Oacoma City Council last night. Also met with City of Chamberlain Mayor and City Engineer. Oacoma has concerns about 11 residences and the sewer system and lift station that services that area. At this time they are unsure of the elevations of the homes and lift station. They have contacted a surveyor to take elevation readings, once elevations are available technical assistance for mitigation can be provided. The town elected to request 300,000 sandbags from the state EOC to allow residents to protect their homes. This may be difficult depending on elevation due to protection heights required, especially from wave action. S-SW winds have a fetch of about 6 miles to develop waves.

4.a.5 Wyoming:

NSTR

4.a.6 Iowa/Missouri:

Mills County: Work at L611-614 was shut down due to rain work will resume this afternoon on Layer 1.

Sioux City: Due to recent rains, contractor is placing additional rock on low point on access road to the Municipal Well.

Hamburg Levee update June 21, 2011:

On June 20, the Ditch 6 Levee system was observed relatively good condition. Water levels were 913.8'. Plastic was finished on the North portion of the levee. Previously identified boils were ringed and new boils identified. The sponsor is very active and the contractor is working on the interior levee toe support berm.

June 21 observations identified that heavy rains last night at about 2100 hours shut night work down. Site is wet but crews were attempting to re-start work by mid morning if

possible. Poly should be complete. Will continue 24/7 operations until critical work at sand boils is complete.

High wind has caused some plastic to blow off of the levee and is causing erosion of the levee. The water level has dropped further to 913.5' and all boils are running clear with the exception of one.

4.a.7 Missouri River Levee Surveillance:

Multiple teams comprised of Omaha District and out-of-District staffs continue to coordinate with local sponsors on any issues/concerns they may have, as well as conduct surveillance on levee conditions. Seepage areas/boils have been observed along the levees. Teams have been providing assistance to Sponsors when seepage areas/boils and other actionable items are observed.

Omaha-Missouri River RB: Pumps are being installed near Rick's Boatyard capable of pumping up to 300,000 gpm. Overall condition of levee is fair. City plans to extend inverted filter in both directions. An area experiencing seepage has been ringed. A drill rig was observed on the levee near the airport at 1800. After checking, it was determined that the drill team's activities were Corps approved.

L624-627/614/611-Mosquito Creek and Upper Pony Creek: On June 20, Near the golf course, a wet area at the landside toe of the levee is showing signs of seepage and/or pin boils. The attempt to fill pipes with flowable fill at the 28th St. pump station did not completely fill the pipe.

L611/614-MoRiver LB & Upper Pony Creek Ditch LB: The pump station at the South end of the system has a flap gate that is stuck open so when the pump stops, water flows backwards through the pump. They are planning on closing this with large sandbags. Material for the inverted filter is being stockpiled until the site is dry enough to begin construction.

L601-Watkins Ditch RB: The sponsor is currently sandbagging a 700' stretch with only 3" of freeboard. The sandbags will bring increase of the freeboard to 1'.

L594/575-BW,PV,Waubonsie:

On June 21 at L594 the team again recommended that the sponsor request National Guard or prisoner assistance. On June 20, there were no changes in the boil field near Waubonsie Creek. There has been no activity regarding burrows.

R616/613-MO River RB and Papillion Creek LB: June 20, Levee is in good shape. Under seepage is occurring without any specific source. No sand boils have been observed. Average freeboard of 4'. Long stretches of R616 have been sandbagged.

R520-MO River RB: On June 21 a large boil field (1000' x 20') was monitored with some seepage on the sand berm. No burrows have been observed and the sponsor was advised to contact Emergency Management.

4.b Equipment:

Sandbags

Issued: 14,637,000

On Hand: 6,923,500

Projected: 6,500,000

HESCO 3'

Issued: 8,200 LF

On Hand: 9,000 LF

Projected: 10,000 LF

HESCO 4'

Issued: 66,070 LF
On Hand: 26,700 LF
Projected: 25,000 LF

Poly Rolls
Issued: 2,836 rolls
On Hand: 1,987 rolls
Projected: 1,500 rolls

Pumps
Issued: 48
On Hand: 8
Serviceable: 7
Projected: 20

Additional Supplies due in:

Pumps: 2 x 8" diesel pumps available.
Pumps: 1 x PTO pump awaiting parts/repair
Pumps: 5 x PTO pumps "on-hold" for emergency response.
Sling Bags: 1,225 ea. 2,000 lb w/slugs on-hand.
Heavy Bags: 6,420 ea. (35x35x35) on-hand now.
Geotextile: 4 rolls (16'x500') on-hand.

4.c Funding:

- * Total Code 200 Funding received to date for this event: \$46,662,425
- * Total Code 200 Funding waiting to be received for this event: \$0
- * Total Code 200 Funding revoked to date for this event: \$4,584,000
- * Class 219 - Emergency Operations - Direct Assistance - \$250,000 - WAD and FAD received 3/14/2011
- * Class 219 - Emergency Operations - Direct Assistance - \$3.825M - WAD received 03/15/11. FAD received 03/16/11.
- * Class 219 - Additional Funds Request on 24 March - \$231,425 - WAD and FAD received 03/24/11.
- * Class 219 - Emergency Operations - Direct Assistance - \$2.5M revoked - 4/13/11
- * Class 219 - Emergency Operations - Direct Assistance - \$100k revoked - 4/22/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$56k - MIPR - 4/30/11 - received \$45k on 4/30/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$25k - Request and received for EOC Operations and deployments on 4/30/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$14k revoked - 05/02/2011
- * Class 210 - Response Operations - Alabama Tornadoes - \$10k revoked - 05/03/2011
- * Class 200 - Emergency Operations - Response Operations - \$500,000 - WAD and FAD received on 05/25/11
- * Class 200 - Emergency Operations - Response Operations - \$750,000 - WAD and FAD received on 05/26/11
- * Class 200 - Emergency Operations - Response Operations - \$5,000,000 - FAD received 05/27/11
- * Class 200 - Emergency Operations - Response Operations - \$10,000,000 - FAD received 05/27/11
- * Class 200 - Emergency Operations - Response Operations - \$3,000,000 - request sent 05/27/11 - WAD received for \$2M received on 05/31/11 - verbal received on 06/04/11 for \$1M
- * Class 200 - Emergency Operations - Response Operations - \$10,000,000 - request sent 05/28/11 - WAD received on received 05/28/11
- * Class 200 - Emergency Operations - Response Operations - \$3,000,000 - request sent 05/31/11 - WAD received 06/01/11
- * Class 200 - Emergency Operations - Response Operations - \$6,500,000 - request sent 06/01/11 - WAD for \$3M received 06/02/011 - verbal received on 06/04/11 for \$3.5M

* Class 200 - Emergency Operations - Response Operations - \$1,500,000 - request sent 06/03/11 - verbal received 06/03/11

* Class 200 - Emergency Operations - Response Operations - \$1,000,000 - request sent 06/03/11 - verbal received 06/03/11 - WAD received 06/06/11

* Class 200 - Emergency Operations - Response Operations - \$500,000 - request sent 06/04/11 - verbal received 06/04/11

* Class 200 - Emergency Operations - Response Operations - \$2,000,000 - request sent 06/05/11 - verbal received 06/05/11

* Class 200 - Emergency Operations - Response Operations - \$400,000 - request sent 06/06/11 - verbal received 06/07/11

* Class 200 - Emergency Operations - Response Operations - \$50,000 - received 06/08/11

* Class 200 - Emergency Operations - Response Operations - \$980,000 - request sent 06/08/11 - WAD received 06/09/11

* Class 200 - Emergency Operations - Response Operations - \$750,000 - request sent 06/09/11 - WAD received 06/10/11

* Class 21M - Emergency Operations - Response Operations - \$210k revoke request sent 06/10/11

* Class 21M - Emergency Operations - Response Operations - \$1,000,000 revoke request sent 06/17/11

* Class 200 - Emergency Operations - Response Operations - \$750,000 - request sent 06/17/11 - verbal received 06/18/11

* Class 219 - Emergency Operations - Response Operations - \$750,000 revoke request sent 06/21/11

* Total Code 500 Funding received to date: \$827,904

* Class 520 Funding - Advance Measures - Technical assistance - \$100K. WAD and FAD received on 3/2/11.

* Class 52A Additional Request for Funding - Advance Measures - Technical assistance - \$100K. WAD and FAD received on 3/10/11.

* Class 520 Additional Request for Funding - Advance Measures - Technical assistance - \$101,640. WAD and FAD received on 3/24/11.

* Class 519 Funding - Advance Measures - Direct Assistance - \$376,264. WAD and FAD received on 3/28/11.

* Class 520 Funding - Advance Measures - Technical assistance - \$110k - FAD received on 05/12/11.

* Class 510 Funding - Advance Measures - Direct assistance - \$40k - FAD received on 05/26/11

Daily Labor Burn Rate: \$137,500
 Daily Contract Burn Rate: \$200,000
 Combined Daily Burn Rate: \$337,500

4.d Number of Personnel Supporting EOC Operations:

Working in field: 52
 Working in District: 50
 Outside District: 1

5.a EOC Activation - Level IV - 24 hour Activation (Shifts: 0700-1930)

[REDACTED]
 Natural Disaster Program Manager, Readiness Branch U.S. Army Corps of Engineers, Omaha District
 1616 Capitol Ave, Ste 9000 (Attn: CENWO-OD-E) Omaha, NE 68102-9000
 Phone: ([REDACTED])
 Cell: ([REDACTED])
 Fax: ([REDACTED])

[REDACTED]@usace.army.mil

Classification: UNCLASSIFIED

Caveats: NONE

090021JUN11

SANDBAGS	3' HESCO	4' HESCO	POLY ROLLS	PUMPS
ISSUED:	14,637,000	8,200	2,836	48
ON HAND:	6,923,500	9,000	1,987	7/8
PROJECTED REQTS:	6,500,000	10,000 LF	25,000 LF	1,500 rolls
				20

Serviceable / On Hand

Notes

1. Pumps: 2 x 8" diesel pumps available.
2. Pumps: 1 x PTO pump awaiting parts/repair.
3. Pumps: 5 x PTO pumps "on-hand" for emergency response.
4. Slingsbags: 1,225ea 2,000 lb w/ slings on-hand.
5. Heavybags: 6,420ea (35x35x35) on-hand now.
6. GeoTextile: 4 rolls (16' x 500') on hand.

6/16/2011

State	City	Amount of above normal precip (in)
ND	Bismarck	0.84
	Minot	0.55
MN	Marshall	1.20
	Luverne	1.32
	Slayton	0.95
	Tracy	1.27
	Windom	1.28
	Worthington	0.86
SD	Faith	1.24
	Rapid City	0.51
	Philip	1.20
	Burke 11S	8.00
	Sioux City 5W	3.43
	Winner	1.60
	Brookings	1.90
	Chamberlain	3.76
	Huron	2.45
	Madison	1.38
	Sioux Falls	1.99
NE	North Platte	0.91
	Hershey 3WSW	7.25
	Sutherland 1W	5.50
	Valentine	1.24
	Ainsworth	3.88
	O'Neill	0.65
	Thedford	1.83
	Imperial	1.26
	Ogallala	0.76
	Aurora	1.02
	Ord	1.75
	Beatrice	0.52
	Blair	0.60
	Fremont	0.72
	Norfolk	0.99
	Offutt AFB	0.72
	Omaha	0.60
	Tekamah	0.63
IA	Le Mars	1.03
	Orange City	0.76
	Sheldon	0.82
	Sioux City	1.04
	Spencer	0.95
	Storm Lake	0.71
	Harlan	0.68

7 Day Temperature Forecasts (High/Low)						
21-Jun-11						
Location	Tue	Wed	Thu	Fri	Sat	Sun
	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun
Helena, MT	75	83/50	77/51	66/49	69/46	71/49
Livingston, MT	78	81/43	83/49	74/50	74/48	78/49
Billings, MT	79	84/52	87/56	78/57	80/56	86/57
West Yellowstone, MT	70	74/39	74/39	67/39	67/37	69/37
Cody, WY	74	79/52	83/54	77/53	76/48	81/51
Sheridan, WY	75	80/48	84/51	77/53	78/51	82/52
Casper, WY	74	82/48	88/49	84/52	84/50	86/51
Laramie, WY	69	75/40	79/44	78/46	77/43	81/44

Mon
27-Jun
73/48
78/49
86/57
70/37
80/51
82/52
86/50
78/41

Missouri River Basin Water Management Situation Report – 6-21-11

Reservoir Conditions

The upper three reservoirs of the Missouri River Mainstem Reservoir System provide the bulk of the storage of water. All three are in their exclusive flood control zones, with Fort Peck and Garrison passing their spillway crest (continuing up on raised spillway gates) and Oahe being near its spillway crest.

Table 1 summarizes the situation as of 0000 hours this morning. The relatively high inflows that have been coming into Garrison and Oahe Reservoirs will likely continue. More details on the reservoirs can be found on the daily bulletin prepared by the Missouri River Basin Water Management Division at: <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>.

Table 1. Key Reservoir Data (through 0000 hrs 6/21/11)

Reservoir	Inflow kcfs	Outflow kcfs	Top of Spillway	Current Level feet msl	24-hr Change feet
			Gates feet msl		
Fort Peck	50.0	61.8	2250	2251.9	-0.1
Garrison	188.0	150.2	1854	1854.2	0.2
Oahe	201.0	160.3	1620	1618.9	0.3
Big Bend	172.0	158.9	1423	1419.9	0.5
Fort Randall	200.0	143.5	1375	1366.3	1.2
Gavins Point	150.0	150.0	1210	1207.5	-0.1

Based on the current level data for the upper three reservoirs, the amount of remaining storage has been changing in its distribution among the upper three, larger reservoirs. Fort Peck remains in surcharge, though outflows did exceed inflows today. With the increased releases from Fort Peck and the increase in tributary inflows, Garrison Reservoir is rising and has gone into surcharge. Oahe will not be surcharged because there are no plans at this time to use its spillway, which would result in the raised gates and the potential to surcharge that reservoir. The lower three reservoirs have much less capability to store the inflows that are coming into the Missouri River Mainstem Reservoir System, with Fort Randall Reservoir having the greater amount. The stored water has entered further into the exclusive flood control zone of Fort Randall, but not of Big Bend and Gavins Point where 100 percent of their exclusive flood control storage remains available. Table 2 summarizes the storage volumes of all six System reservoirs, with the last column listing the amount of exclusive flood control storage that remains as of today. Spillways are now being used at five of the six reservoirs, with no plans to use the Oahe spillway at this time.

Table 2. Reservoir Storage Data (through 0000 hrs 6/21/11)

Reservoir	Current	Total	Remaining	Exclusive	% Excl Left
	kAF	kAF	kAF	kAF	
Fort Peck	18,938	18,463	-475	971	-49
Garrison	23,867	23,821	-46	1,489	-3
Oahe	22,690	23,137	447	1,102	41
Big Bend	1,614	1,798	184	60	100
Fort Randall	4,554	5,418	864	985	88
Gavins Point	381	450	69	57	100

Releases from all six reservoirs are currently exceeding records prior to 2011. Table 3 provides release data for all six reservoirs to provide some perspective on the changes that will be happening over the next 2 weeks. Beginning June 17, releases from Oahe and Big Bend reservoirs were increased to 160,000 cfs to gain storage space for future rainfall events affecting Oahe and Garrison reservoirs levels. Releases from Fort Peck have been reduced as inflows continue to decline. The other reservoir releases are currently being maintained at their anticipated maximum releases. Full listing of the reservoir data through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>.

Table 3. Reservoir Release Comparisons (through 0000 hours 6/21/11)

Reservoir	Yesterday	Forecast Today	7 days out	14 days out	Pre-2011 Record
	kcfs	kcfs	kcfs	kcfs	kcfs
Fort Peck	61.8	60	60	60	35
Garrison	150.2	150	150	150	65
Oahe	160.3	160	160	160	59
Big Bend	158.9	160	160	160	74
Fort Randall	143.5	143	148	148	67
Gavins Point	150.0	150	150	150	70

River Conditions

Levees have been constructed by the Corps at numerous locations, resulting primarily from the releases from Garrison, Oahe, and Gavins Point Dams. Many communities along the lower Missouri River are currently experiencing Missouri River flows that are above flood stage by several feet. The flood stages currently being experienced will be exceeded as Missouri River Mainstem Reservoir System releases move through their downstream reaches and inflows from the downstream reaches and localized precipitation joins these high releases. Table 4 summarizes the current conditions as of 0600 hours this morning and the Corps' current forecast for crest stages.

Table 4. Missouri River Stage Data for 6/21/11 at 0600 CDT

Location	Flood Stage	Current Stage	Forecast Crest Stage	Date of Crest Stage
Bismarck, ND	16	18.8	20.6	mid-Jun
Pierre, SD	13	19.8	18.7	mid-Jun
Sioux City, IA	30	34.0	35-37	mid-Jun thru July
Decatur, NE	35	38.6	40-42	mid-Jun thru July
Omaha, NE	29	34.4	34-36	mid-Jun thru July
Nebraska City, NE	18	26.8	27-28+	mid-Jun thru July
St. Joseph, MO	17	24.6	27-32	mid-Jun thru July
Kansas City, MO	32	26.4	30-39	mid-Jun thru July
Waverly, MO	20	24.8	27-31	mid-Jun thru July
Boonville, MO	21	22.1	27-33	mid-Jun thru July
Hermann, MO	21	21.6	27-33	mid-Jun thru July

Figures 1 and 2 present the plots of the 0600 hour stages at Bismarck and Pierre, respectively. The stages at Bismarck have not reached the initial estimated levels as the Garrison Reservoir releases have increased. The reduction is likely due to the scouring of the channel as the flows are well above the levels in recent years. The stages at Pierre have closely followed the estimated levels, being just slightly over the initial estimate for crest elevation, as the upstream Oahe Reservoir releases reached the 150-kcfs level. Increasing releases from Oahe Reservoir to 160,000 cfs has slightly increased stages at Pierre. However, the stages at both cities are still below the constructed levee crests.

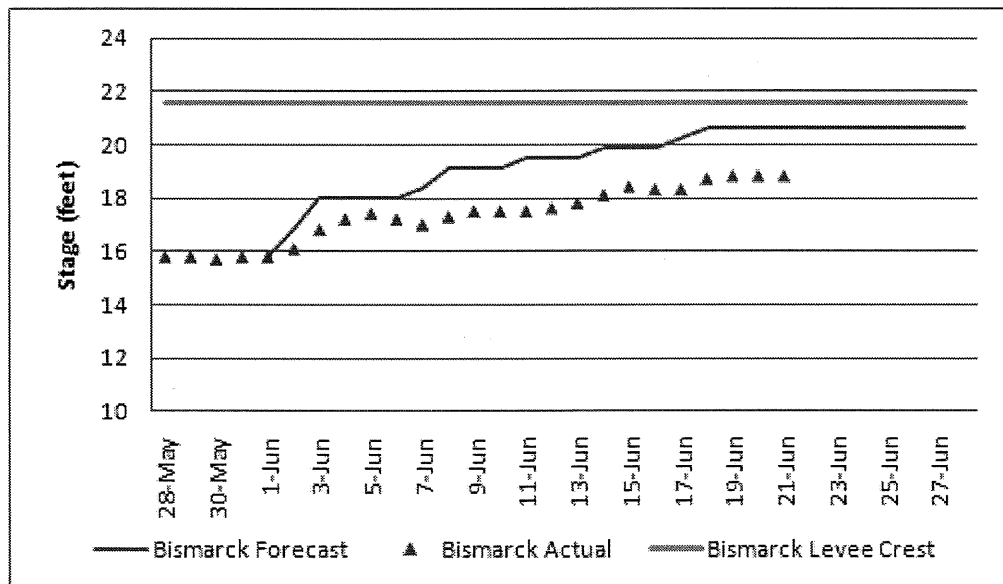


Figure 1. Missouri River stages at Bismarck, North Dakota.

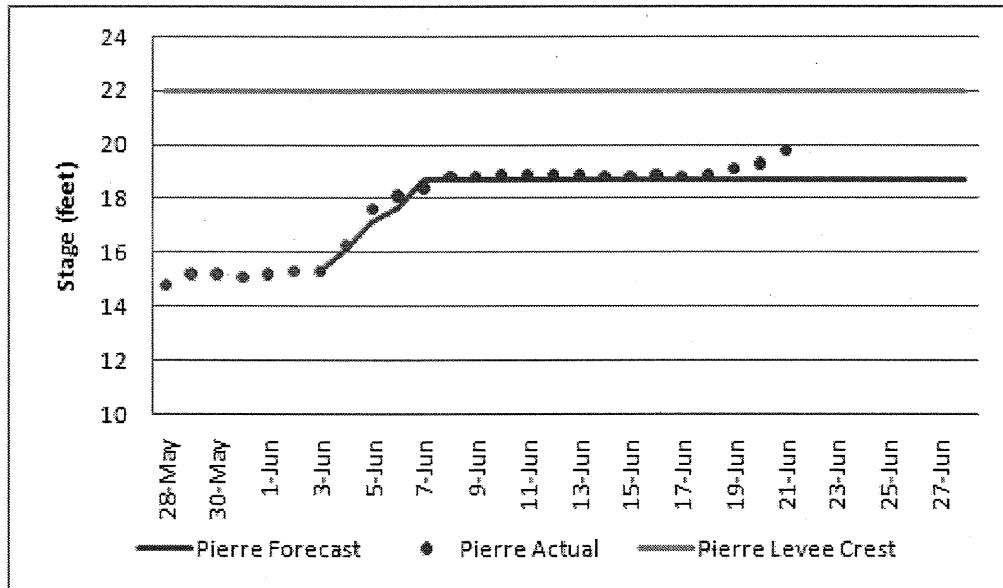


Figure 2. Missouri River stages at Pierre, South Dakota.

Information on Current Mountain Snowpack and Forecasted Rainfall

Releases from the System reservoirs are based on snowpack and rainfall forecasts in the Missouri River basin. An updated snowfall forecast was prepared on June 20; however, the Hydrometeorological Prediction Center (HPC) of NOAA prepares a rainfall forecast daily for up to the next 5 days, with an accumulated figure also presented on its website. The next 5 days do not look good as widespread moderate to heavy rain is forecasted for much of the Missouri River Basin. Figure 3 is the accumulated 5-day rainfall forecast for today by HPC, and Figure 4 is the June 20 mountain snowpack updated by the Corps.

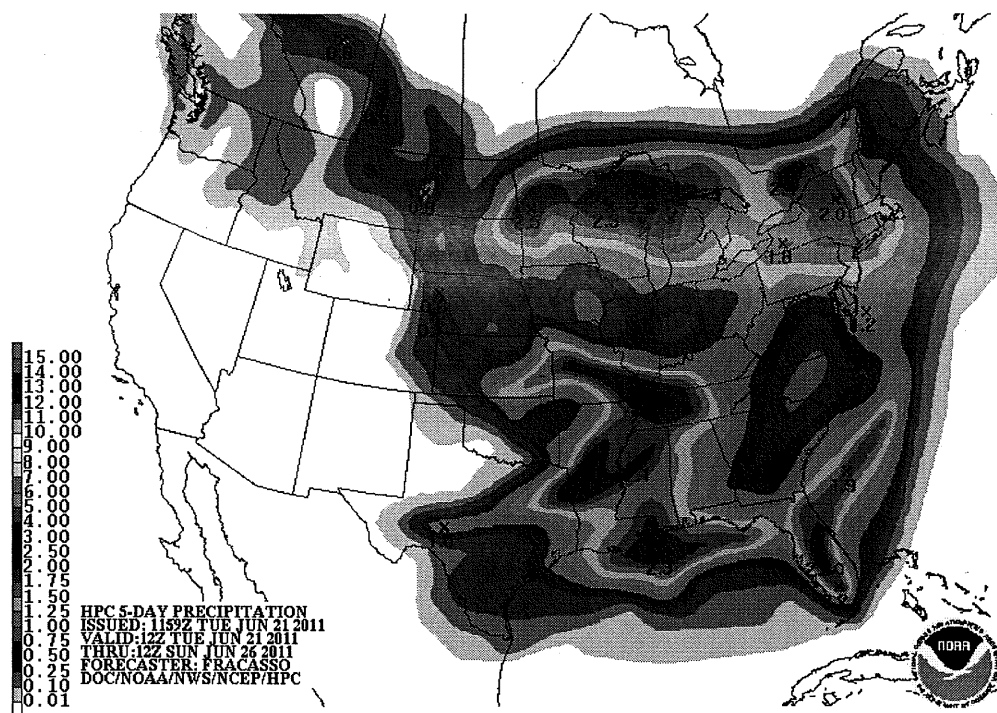


Figure 3. 5-day total QPF ending 0700 Sunday, June 26, 2011.

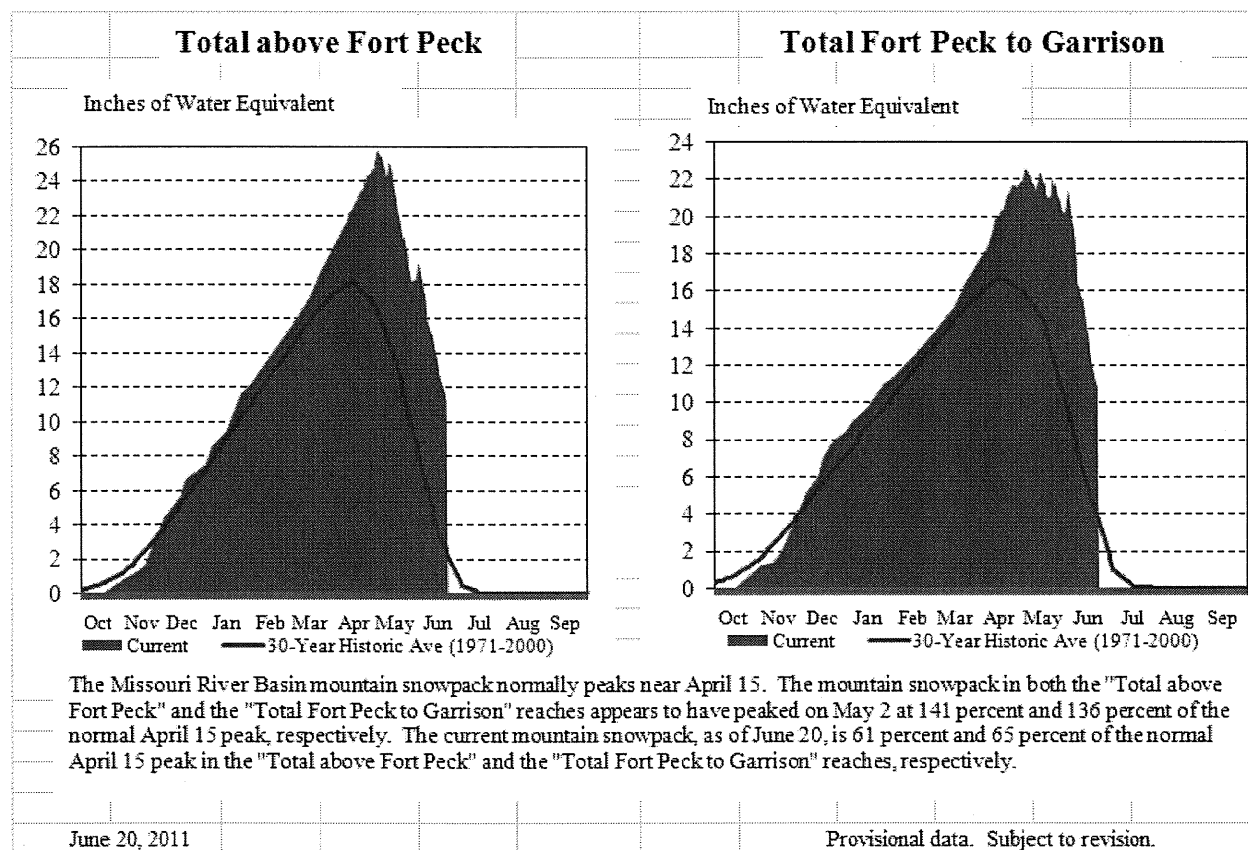


Figure 4. Missouri River basin mountain snowpack water content summary, 2010-2011 – June 20, 2011.

Current Actions and Notable Information

Levee construction been completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System reservoirs. Floodplain evacuations have been ongoing for many lower-lying areas along the lower Missouri River. The most recent of these levees, the Hamburg levee, has also been completed. The failure of levee L-575 occurred at river stages just under the maximum stage in 2010.

Figure 5 is a plot showing the Nebraska City (just across the river from the upper reaches of L-575) 0600 stages for 2010 and 2011 (through today), both years with high river stages. This figure shows that the river level is now above the 2010 maximum.

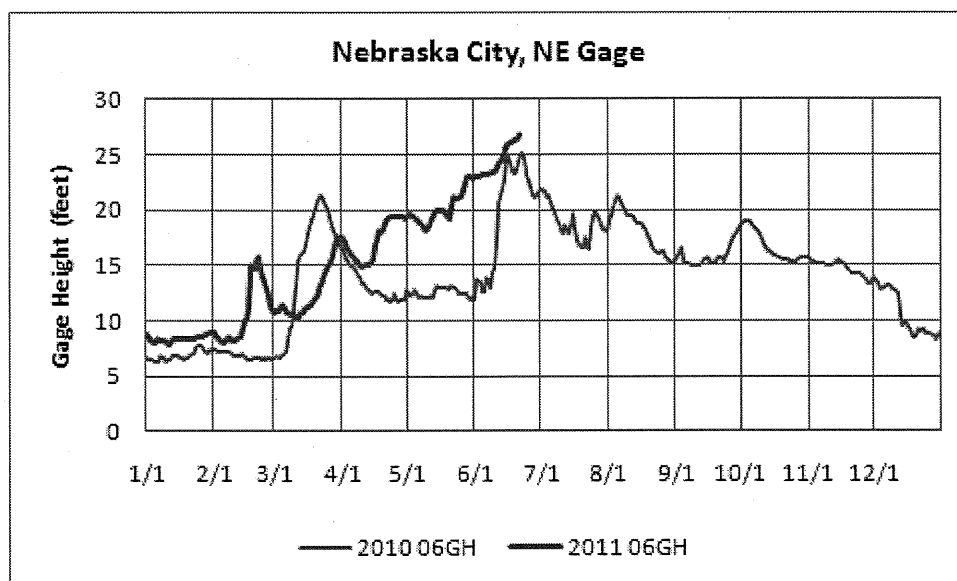


Figure 5. River stages at Nebraska City, Nebraska for 2010 and 2011.

A second levee failed at Big Lake, Missouri Monday, June 13. This location is across the river from Rulo, Nebraska. The gage plot for this location is shown below as Figure 6. Another factor, such as duration of water against the levee or back-to-back years with water against the levee appears to be playing a role in the failure of this levee as well as the levee near Hamburg.

June 19, L-550 located north of Highway 136 in Atchison County, Missouri overtopped. Water levels at the Brownsville gauge increased approximately two feet in a 24-hour period from 5:30 a.m. 18 June to 5:30 a.m. 19 June.

Additionally, levee R-548, located south of Brownsville in Nemaha County, Nebraska overtopped on June 19.

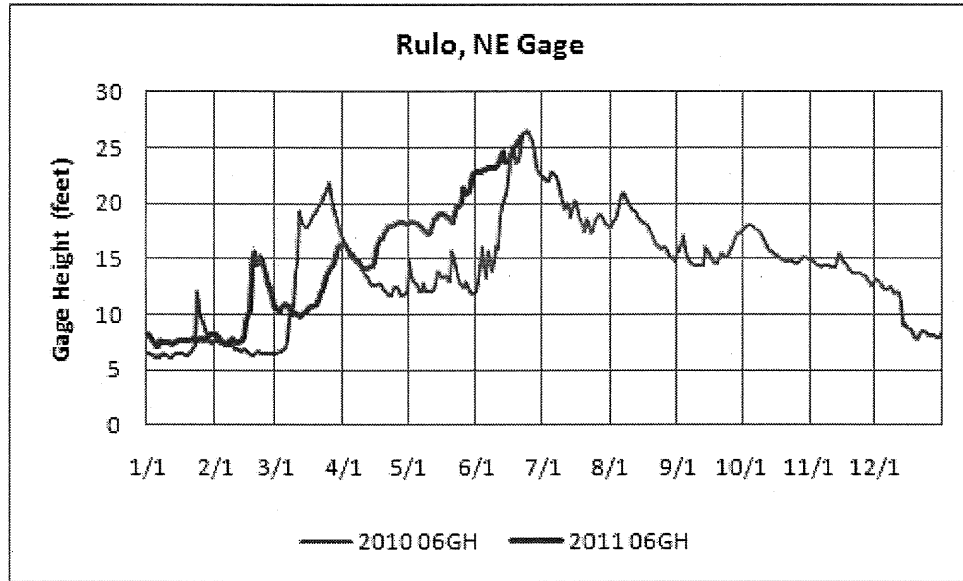


Figure 6. River stages at Rulo, Nebraska for 2010 and 2011.

Moderate rains fell over South Dakota, Nebraska, and Kansas between 0700 hours yesterday and today although lighter rains fell in Montana, Wyoming, and North Dakota. Figure 7 shows the amount of rain that fell in the basin and surrounding area of the Central Region of the United States.

NWS Central Region: Current 1-Day Observed Precipitation
Valid at 6/21/2011 1200 UTC- Created 6/21/11 15:41 UTC

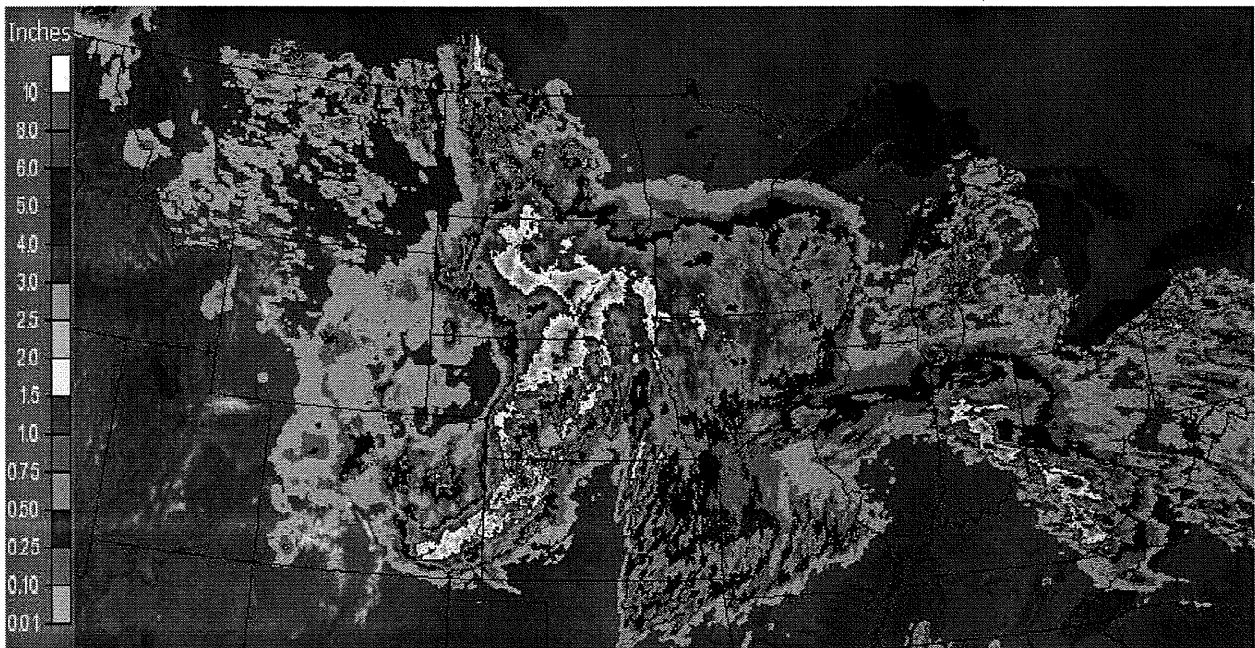


Figure 7. Rainfall on the Central Region of the United States for June 20, 2011.

6/16/2011

State	City	Amount of above normal precip (in)
ND	Bismarck	0.84
	Minot	0.55
MN	Marshall	1.20
	Luverne	1.32
	Slayton	0.95
	Tracy	1.27
	Windom	1.28
	Worthington	0.86
SD	Faith	1.24
	Rapid City	0.51
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	Burke 11S	8.00
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	Chamberlain	3.76
	Huron	2.45
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	Imperial	1.26
	Ogallala	0.76
	Aurora	1.02
	Ord	1.75
	Beatrice	0.52
	Blair	0.60
	Fremont	0.72
	Norfolk	0.99
	Offutt AFB	0.72
	Omaha	0.60
	Tekamah	0.63
IA	Le Mars	1.03
	Orange City	0.76
	Sheldon	0.82
	Sioux City	1.04
	Spencer	0.95
	Storm Lake	0.71
	Harlan	0.68

7 Day Temperature Forecasts (High/Low)						
21-Jun-11						
Location	Tue	Wed	Thu	Fri	Sat	Sun
	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun
Helena, MT	75	83/50	77/51	66/49	69/46	71/49
Livingston, MT	78	81/43	83/49	74/50	74/48	78/49
Billings, MT	79	84/52	87/56	78/57	80/56	86/57
West Yellowstone, MT	70	74/39	74/39	67/39	67/37	69/37
Cody, WY	74	79/52	83/54	77/53	76/48	81/51
Sheridan, WY	75	80/48	84/51	77/53	78/51	82/52
Casper, WY	74	82/48	88/49	84/52	84/50	86/51
Laramie, WY	69	75/40	79/44	78/46	77/43	81/44

Mon
27-Jun
73/48
78/49
86/57
70/37
80/51
82/52
86/50
78/41



US Army Corps
of Engineers
Omaha District

U.S. Army Corps of Engineers, Omaha District

Missouri River Basin

Mainstem and Tributary Reservoir Bulletin

Project Data Date/Time: 06/21/11 12:00 AM

Bulletin Updated: 6/21/11 10:51 AM

Project	Project Information				Current Data					Occupied Storage		
	Elevations (ft msl)		Storage		Elevation (ft msl)	Dly Elev. Change	Storage (ac-ft)	Inflow (dsf)	Release (dsf)	MP (%)	FC (ac-ft)	FC (%)
	MP	FC	MP	FC								
MRR - Missouri River Mainstem Projects												
*Please note Mainstem and USBR data is calculated manually and will populate before 12:00 p.m.												
Fort Peck	2234.0	2250.0	14,788,000	18,463,000	2251.93	-0.11	18,938,000	50,000	61,800	100.0	4,150,000	112.8
Garrison	1837.5	1854.0	18,109,625	23,820,730	1854.15	0.20	23,867,000	188,000	150,200	100.0	5,757,375	100.8
Oahe	1607.5	1620.0	18,834,035	23,136,960	1618.91	0.30	22,690,000	201,000	160,300	100.0	3,855,965	89.6
Big Bend	1420.0	1423.0	1,621,484	1,798,614	1419.88	0.47	1,614,000	172,000	158,900	99.5	0	0.0
Fort Randall	1350.0	1375.0	3,124,368	5,418,186	1366.34	1.2	4,554,000	200,000	143,500	100.0	1,429,632	62.3
Gavins Point	1204.5	1210.0	320,971	469,928	1207.48	-0.09	381,000	150,000	150,000	100.0	60,029	40.3
System Totals							72,044,000					
NWO - USBR Section 7 Projects												
Tiber	2993.0	3012.5	925,649	1,328,723	3005.84	0.34	1,179,860	4,421	758	100.0	254,211	63.1
Clark Canyon	5546.1	5560.4	174,367	253,442	5551.41	0.43	202,403	1,493	290	100.0	28,036	35.5
Canyon Ferry	3797.0	3800.0	1,891,888	1,992,977	3796.13	0.64	1,860,981	25,950	16,282	98.4	0	0.0
Boysen	4725.0	4732.2	741,594	892,226	4706.39	-0.04	444,541	5,609	5,804	59.9	0	0.0
Buffalo Bill	5393.5	5393.5	646,565	646,565	5353.65	0.04	359,690	5,782	5,660	55.6	-	-
Yellowtail	3640.0	3657.0	1,070,000	1,328,000	3637.12	0.34	985,635	17,377	15,386	92.1	0	0.0
Jamestown	1429.8	1454.0	31,510	221,000	1443.50	-0.09	102,143	702	1,180	100.0	70,633	37.3
Heart Butte	2064.4	2094.5	67,000	214,000	2066.29	-0.09	73,157	434	591	100.0	6,157	4.2
Keyhole	4099.3	4111.5	194,000	334,000	4097.79	0.01	174,772	46	0	90.1	0	0.0
Pactola	4580.2	4621.5	56,000	99,000	4581.57	0.20	57,140	192	104	100.0	1,140	2.7
Shadehill	2271.9	2302.0	120,000	350,000	2273.13	0.05	125,895	581	450	100.0	5,895	2.6
Glendo	4635.0	4653.0	518,000	790,000	4638.98	0.09	568,686	8,298	7,624	100.0	50,686	18.6
NWO - USACE Tributary Projects												
Bowman-Haley	2754.8	2777.0	18,765	91,482	2755.70	-0.05	20,373	118	162	100.0	1,608	2.2
Pipestem	1442.5	1496.3	8,944	142,107	1482.96	-0.16	89,666	-254	600	100.0	80,722	60.5
Chatfield	5432.0	5500.0	27,428	234,207	5431.34	0.37	26,481	120	0	96.5	0	0.0
Cherry Creek	5550.0	5598.0	12,805	133,134	5550.26	0.37	13,018	55	15	100.0	213	0.2
Bear Creek	5558.0	5635.5	1,882	30,586	5559.02	0.69	1,991	92	100	100.0	109	0.4
Papio #11	1121.0	1142.0	3,054	16,907	1121.46	0.09	3,234	24	6	100.0	180	1.3
Papio #16	1104.0	1121.0	1,211	4,782	1104.27	0.18	1,246	12	1	100.0	35	1.0
Papio #18	1110.0	1128.2	2,916	10,512	1092.20	0.00	262	0	0	9.0	0	0.0
Papio #20	1095.8	1113.1	2,536	8,611	1096.12	0.10	2,586	4	0	100.0	50	0.8
Cottonwood	3875.0	3936.0	655	8,385	3856.50	-0.01	0	0	0	0.0	0	0.0
Cold Brook	3585.0	3651.4	520	7,200	3582.99	0.01	448	1	0	86.2	0	0.0
Lake Audubon	1847.0	1847.0	323,690	323,690	1849.45	0.05	INFLOW AND OUTFLOW NOT CALCULATED					
Lake Pocasse	1617.0	1617.0	11,000	11,000	POOL ELEVATION READ MONTHLY BY PROJECT OFFICE							
Salt Creek #02	1335.0	1350.0	1,100	4,957	1334.01	0.13	946	10	0	86.0	0	0.0
Salt Creek #04	1307.4	1322.5	2,531	9,660	1307.31	0.13	2,503	21	0	98.9	0	0.0
Salt Creek #08	1287.8	1302.0	1,780	8,375	1288.76	0.61	2,048	114	26	100.0	268	4.1
Salt Creek #09	1271.1	1285.0	1,451	5,864	1271.37	0.10	1,504	12	2	100.0	53	1.2
Salt Creek #10	1244.9	1262.0	1,629	7,468	1245.31	0.02	1,717	5	3	100.0	88	1.5
Salt Creek #12	1232.9	1252.0	1,808	9,415	1233.12	0.02	1,855	3	1	100.0	47	0.6
Salt Creek #13	1341.0	1355.0	2,161	7,182	1340.96	-0.01	2,151	-1	0	99.5	0	0.0
Salt Creek #14	1244.3	1263.5	7,500	27,597	1244.40	-0.01	7,570	-4	0	100.0	70	0.3
Salt Creek #17	1242.4	1266.0	783	6,628	1243.37	0.33	932	31	9	100.0	149	2.5
Salt Creek #18	1284.0	1311.0	25,088	96,759	1284.35	-0.01	25,736	8	18	100.0	648	0.9



US Army Corps
of Engineers®
Omaha District

U.S. Army Corps of Engineers, Omaha District

Missouri River Basin

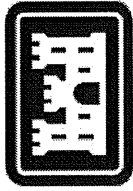
Mainstem Reservoir Bulletin

Bulletin Updated: 6/21/11 10:50 AM

Project	Project Information					Current Data (as of 00:00)				Occupied Storage							
	Elevations (ft msl)			Storage Capacity (ac-ft)		Total Occupied Storage (ac-ft)	Dly Elev. Change (ft msl)	Elevation (ft msl)	Inflow (dsf)	Release (dsf)	Multi-Use		Annual FC		Exclusive		
	Top of Multi-Use	Top of Annual FC	Top of Exclusive	Multiple Use	Annual FC						Exclusive	(ac-ft)	(%)	(ac-ft)	(%)		
Project Data Date/Time 6/21/2011																	
TODAY																	
Fort Peck	2234.0	2246.0	2250.0	14,788,000	2,704,000	971,000	-0.11	2251.93	50,000	61,800	14,788,000	100.0	2,704,000	100.0	1,446,000	148,900	
Garrison	1837.5	1850.0	1854.0	18,110,000	4,222,000	1,489,000	0.20	1854.15	188,000	150,200	18,110,000	100.0	4,222,000	100.0	1,535,000	103,100	
Oahe	1607.5	1617.0	1620.0	18,834,000	3,201,000	1,102,000	0.30	1618.91	201,000	160,300	18,834,000	100.0	3,201,000	100.0	655,000	58,400	
Big Bend	1420.0	1422.0	1423.0	1,621,000	117,000	60,000	0.47	1419.88	172,000	158,900	1,614,000	99.6	0	0.0	0	0.0	
Fort Randall	1350.0	1365.0	1375.0	3,124,000	1,309,000	985,000	0.12	1366.34	200,000	143,500	3,124,000	100.0	1,309,000	100.0	121,000	12,300	
Gavins Point	1204.5	1208.0	1210.0	307,000	86,000	57,000	-0.09	1207.48	150,000	150,000	307,000	100.0	74,000	86.0	0	0.0	
System Totals				56,784,000	11,639,000	4,664,000					56,777,000		11,510,000		3,757,000		
Project Data Date/Time 6/20/2011																	
YESTERDAY																	
Fort Peck	2234.0	2246.0	2250.0	14,788,000	2,704,000	971,000	-0.06	2252.04	51,000	65,500	14,788,000	100.0	2,704,000	100.0	997,243	102,700	
Garrison	1837.5	1850.0	1854.0	18,110,000	4,222,000	1,489,000	0.05	1853.95	165,000	150,200	18,110,000	100.0	4,222,000	100.0	1,462,000	98,200	
Oahe	1607.5	1617.0	1620.0	18,834,000	3,201,000	1,102,000	0.14	1618.61	153,000	158,700	18,834,000	100.0	3,201,000	100.0	576,000	52,300	
Big Bend	1420.0	1422.0	1423.0	1,621,000	117,000	60,000	-0.13	1419.41	156,000	158,800	1,588,000	98.0	0	0.0	0	0.0	
Fort Randall	1350.0	1365.0	1375.0	3,124,000	1,309,000	985,000	0.61	1365.10	171,000	143,600	3,124,000	100.0	1,309,000	100.0	9,000	0.0	
Gavins Point	1204.5	1208.0	1210.0	307,000	86,000	57,000	-0.11	1207.57	148,000	150,000	307,000	100.0	74,000	86.0	0	0.0	
System Totals				56,784,000	11,639,000	4,664,000					56,751,000		11,510,000		3,044,243		
RECENT ELEVATIONS																	
											06/21	06/21	06/21	06/21	06/21	06/21	06/21
											00:00	03:00	06:00	09:00	10:00	10:00	10:00
											Fort Peck	2251.92	2251.93	2251.91	2251.90	2251.90	2251.90
											Garrison	1854.13	1854.19	1854.28	1854.30	1854.25	1854.25
											Oahe	1618.95	1618.97	1619.11	1619.31	1619.35	1619.35
											Big Bend	1419.89	1419.93	1419.97	1420.10	1420.18	1420.18
											Fort Randall	1366.37	1366.39	1366.61	1366.85	1366.95	1366.95
											Gavins Point	1207.68	1207.61	1207.59	1207.68	1207.68	1207.68

DAM INFORMATION	Surveillance Period Triggers			Record Pool Level		Design		Top of		Design Spillway Elev.	
	Weekly	Daily	24 hour	Elev	Year	Dam Crest	Surcharge	Crest	Top of Gate		
	2246.0	2247.0	2248.0	2252.0	1975	2280.5	2256.1	2225.0	2250.0		
	1850.0	1854.0	1854.8	1854.8	1975	1875.0	1858.5	1825.0	1854.0		
	1617.5	1618.7	1618.7	1618.7	1995	1660.0	1596.5	1596.5	1620.0		
	1422.0	1422.0	1423.0	1422.1	1991	1440.0	1433.6	1385.0	1423.0		
	1365.0	1370.0	1372.0	1372.2	1997	1395.0	1379.3	1346.0	1375.0		
	1210.0	1210.0	1210.7	1210.7	1960	1234.0	1221.4	1180.0	1210.0		

DAM INFORMATION	Surveillance Period		Triggers	Record Pool Level		Design Dam Crest	Top of Surcharge	Design Spillway Elev.	
	Weekly	Daily		Elev	Year			Crest	Top of Gate
Fort Peck (FP)	2246.0	2247.0	2250.0	2252.0	1975	2280.5	2256.1	2225.0	2250.0
Garrison (GA)	1850.0	1854.0	1854.8	1854.8	1975	1875.0	1858.5	1825.0	1854.0
Oahe (OA)	1617.5	1618.7	1618.7	1618.7	1995	1660.0	1644.4	1596.5	1620.0
Big Bend (BB)	1422.0	1422.0	1423.0	1422.1	1991	1440.0	1433.6	1385.0	1423.0
Fort Randall (FR)	1365.0	1370.0	1372.0	1372.2	1997	1395.0	1379.3	1346.0	1375.0
Gavins Point (GP)	1210.0	1210.0	1210.7	1210.7	1960	1234.0	1221.4	1180.0	1210.0



**US Army Corps
of Engineers®**

Current Stage **NWS 5-Day Forecast Peak**

Gage	Stage	Date
Williston	30.57	Steady
Omaha	34.48	Steady
Nebraska City	26.93	Steady
Brownville	43.96	21-Jun
Rulo	26.12	25-Jun

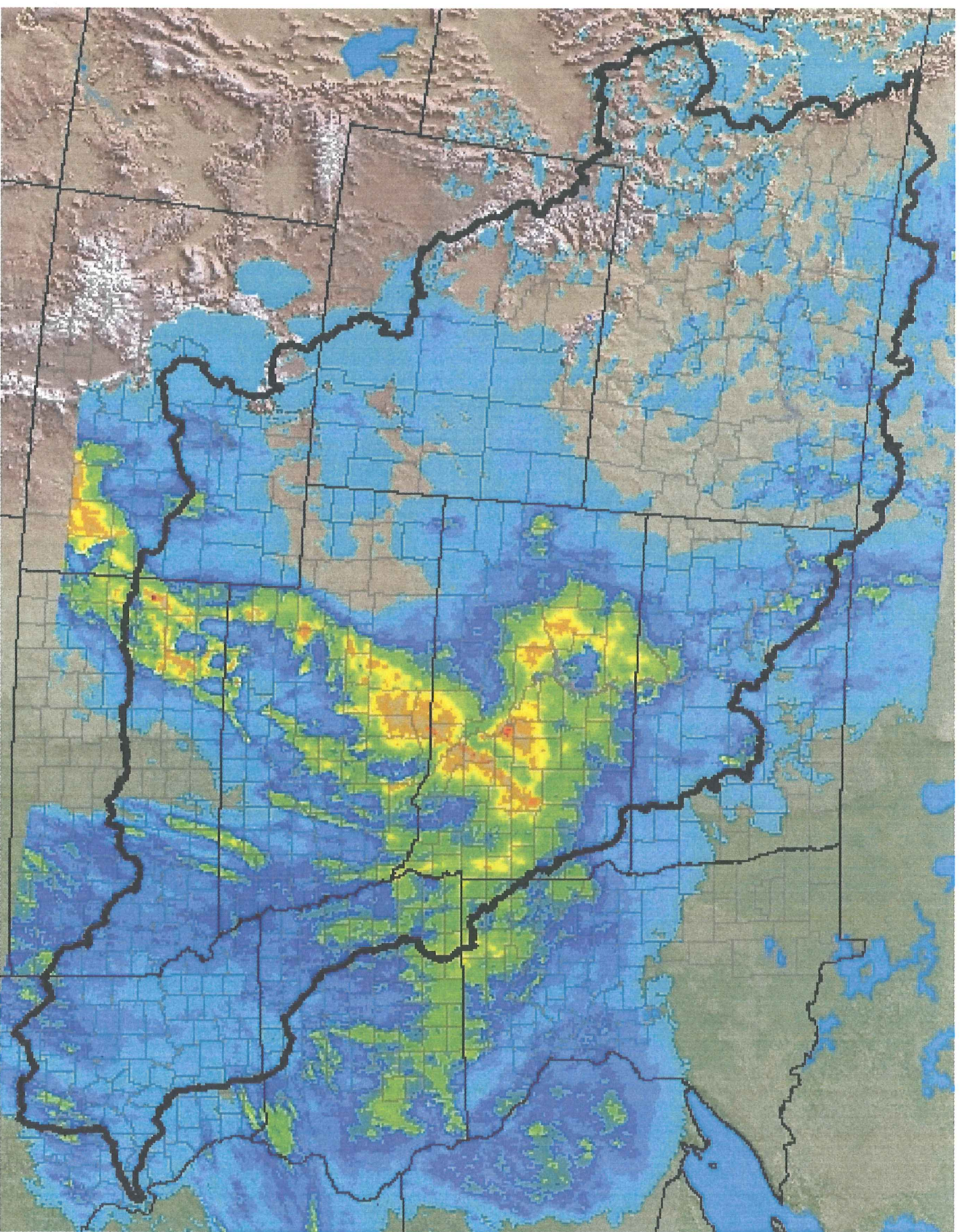
Freeboard

> 5'
2' - 5'
< 2'
Breached
Breached

6/21/2011 10:00

Missouri River Federal Levee	Stream Gage Location	Likely Range of Stage with normal precipitation (ft)	Overtop Stage Previous Estimate	Overtop Stage FreeBoard Survey	Current FreeBoard (feet)	FreeBoard w/ NWS 5-Day Forecast (feet)
Williston Levee	Williston	30.5	n/a	32	1.4	1.4
Omaha Levee D/S 275	Omaha	36	40	38	3.5	3.6
Omaha Flood Wall	Omaha	36	41	41	6.5	6.6
Council Bluffs Ind Levee	Omaha	36	n/a	36.8	2.3	2.4
Council Bluffs Fed Levee	Omaha	36	40	40.2	5.7	5.8
L627	Omaha	36	36	38	3.5	3.6
L624	Omaha	36	35	38	3.5	3.6
L611-614	Omaha	36	35	38	3.5	3.6
R616	Omaha	36	35	36.6	2.1	2.2
R613	Omaha	36	35	36.8	2.3	2.4
L601	Nebraska City	28+	25.4	29	2.1	2.1
L594	Nebraska City	28+	26	30	3.1	3.1
L575	Nebraska City	27	27	27	BREACHED	BREACHED
R573	Nebraska City	27	27	28.2	1.3	1.3
R562	Nebraska City	27	25.5	28.7	1.8	1.8
R548	Brownville	43	44	43.9	3.1	
L550	Brownville	43	42.8	43.7	3.3	
L536	Brownville	43	44.3	43.9	3.1	
R520	Rulo	25.5	27	30	3.9	3.3

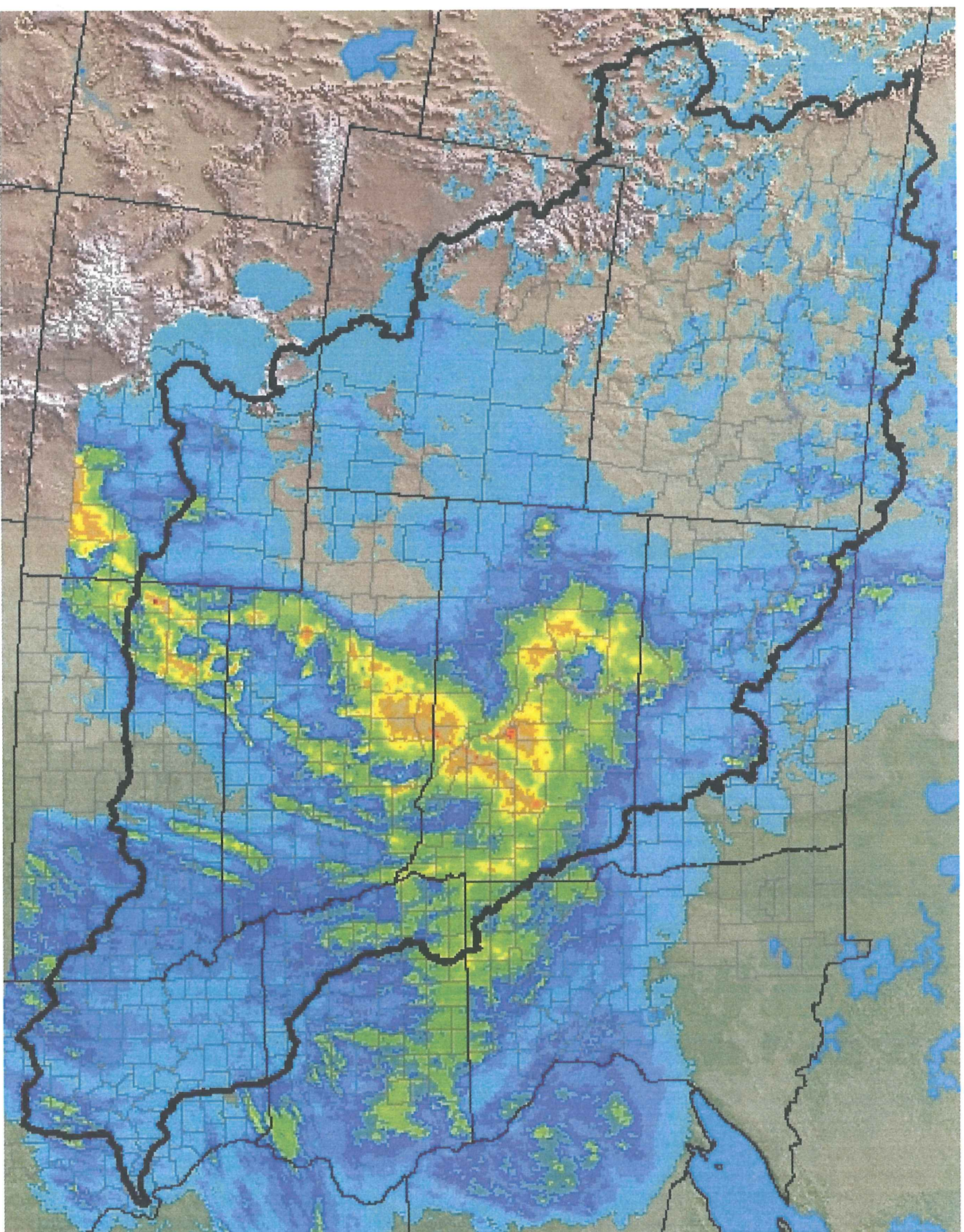
*NOTE: FreeBoard survey values may not include all low areas. Overtopping could occur at stages approximately 1 foot below surveyed value.



MBRFC 24-Hour Gage Biased Estimated Rainfall (inches)

Ending: 6/21/2011 at 7:00AM CDT

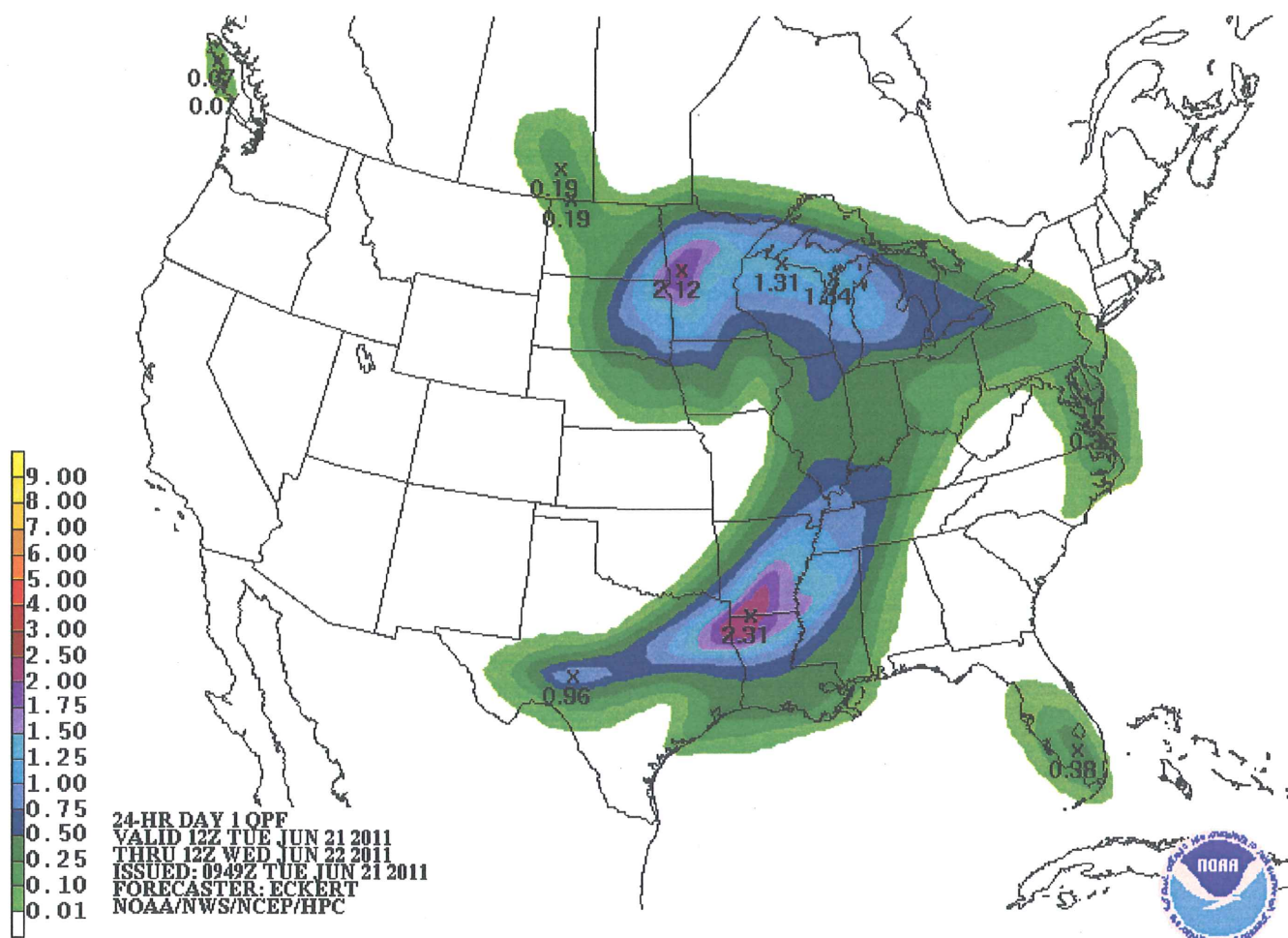
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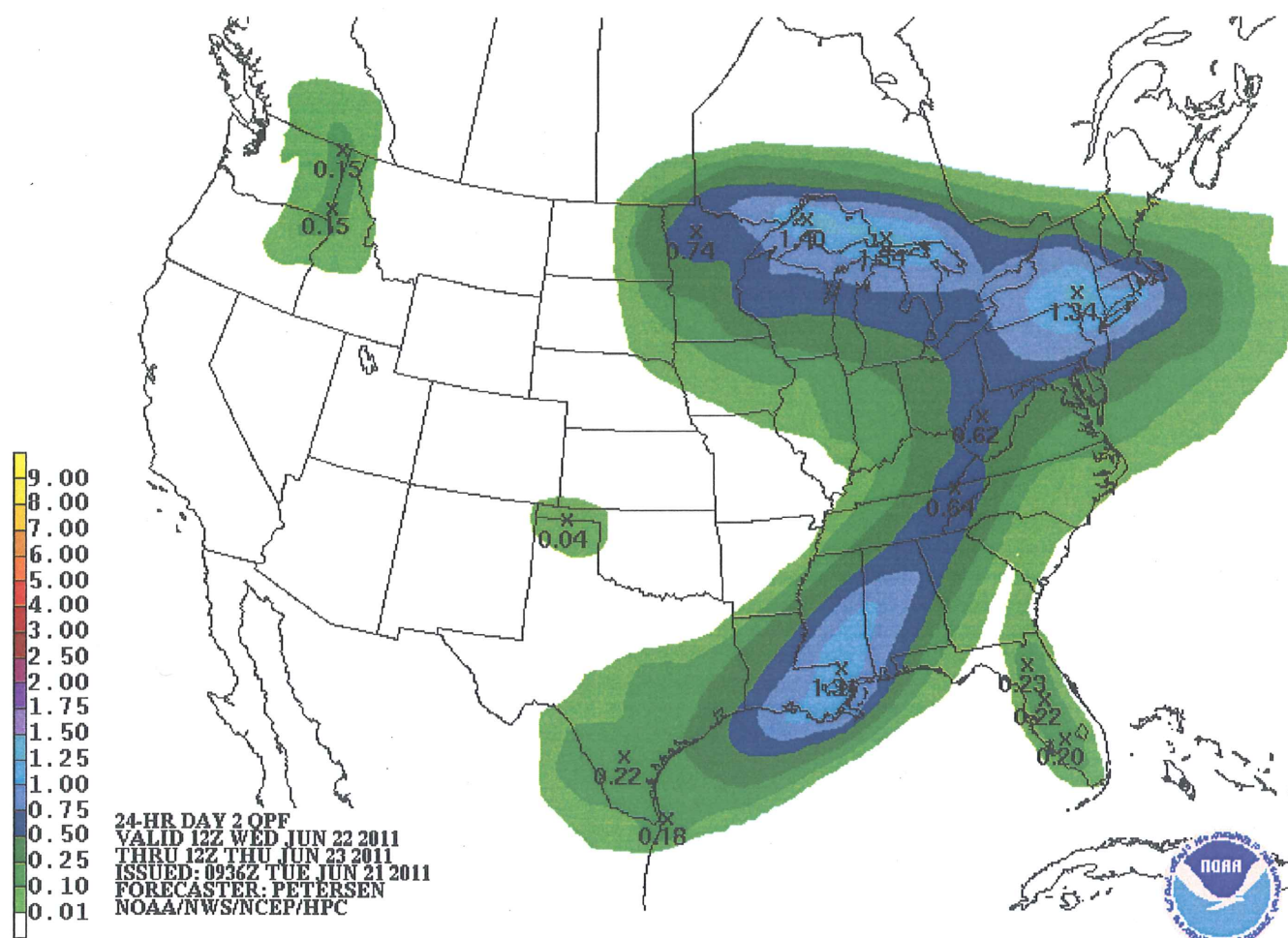


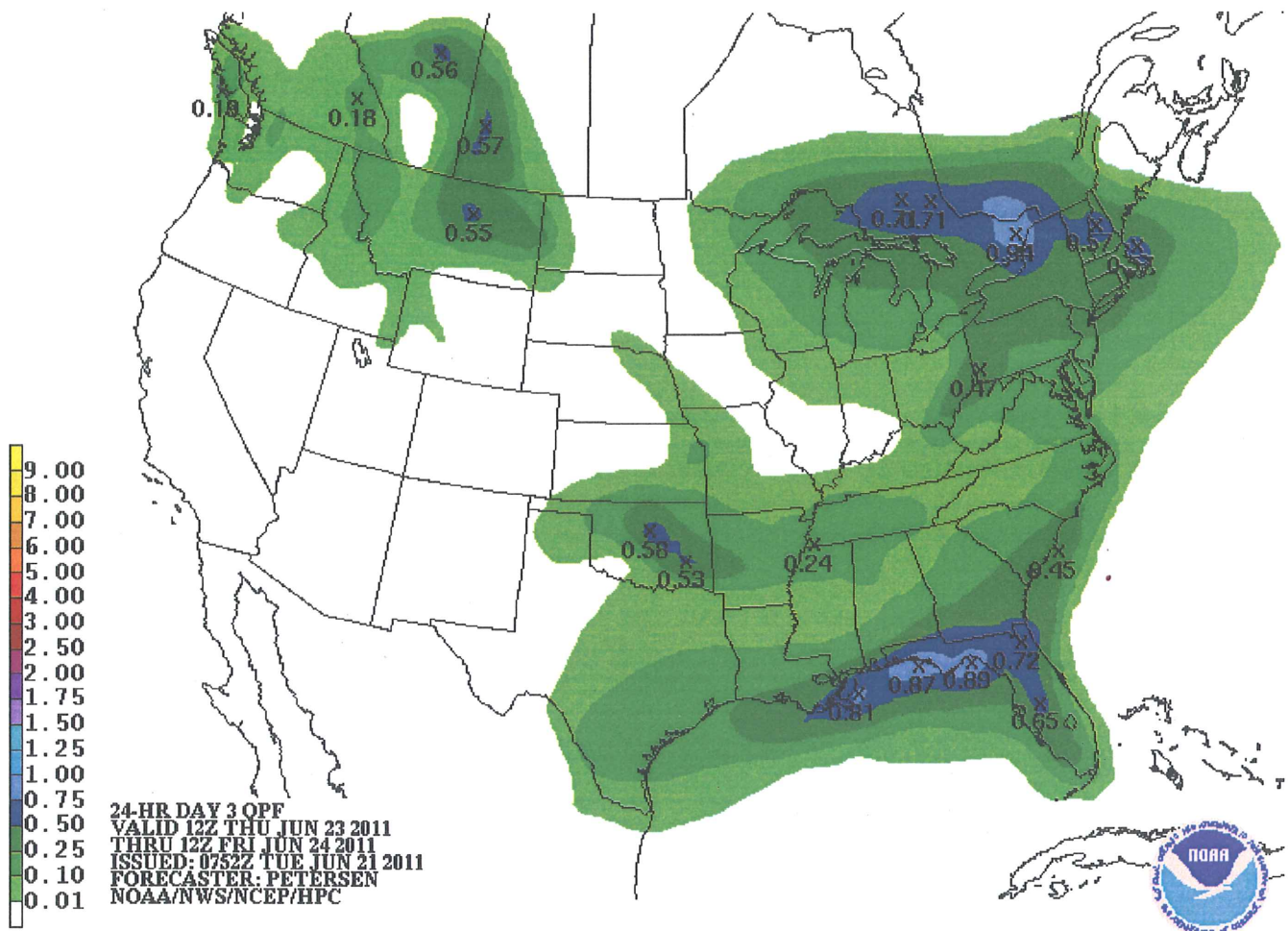
0.01 0.05 0.10 0.25 0.50 0.75 1.00 1.50 2.00 2.50 3.00 4.00 5.00 6.00 8.00 +

MBRFC 24-Hour Gage Biased Estimated Rainfall (inches)

Ending: 6/21/2011 at 7:00AM CDT







[REDACTED] NWO

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 7:15 PM
To: Farhat, Jody S NWD02
Subject: RE: Today's staff notes (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Jody,
I understand. It's just very frustrating, and difficult, to schedule; staffing, outages, and gate changes around a moving target. At least it seems to be moving in the right direction...

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 7:00 PM
To: [REDACTED] NWO
Subject: RE: Today's staff notes (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Todd - As I'm sure you know there were no changes to Garrison releases. We reduced inflows later in the forecast period slightly which reduced your forecasted pool level about half a foot - we may be taking additional water out tomorrow as we try to hone in on the remaining snowpack runoff.

Sorry for the late posting of the forecast. Lots a bit of runoff coming into the lower four reservoirs made for a very hectic day.

Jody

-----Original Message-----

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 5:28 PM
To: DLL-CENWO-OD-GA; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] HQ02; [REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] P NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] Y@ POD; [REDACTED] NWO
Subject: Today's staff notes (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

All,
I apologize for the delay in getting today's notes out. Too many unplanned interruptions again today... I did not attach the current 3-week schedule as it changed again, rather significantly and has rendered several issues addressed again today irrelevant. I'll try again tomorrow.

[REDACTED], P.E.
Operations Project Manager
Garrison Project

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 7:01 PM
To: Farhat, Jody S NWD02; McMahon, John R BG NWD; Tipton, Robert A Col NWD; Anderson, G Witt NWD; Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK; Blechinger, Erik T NWO; [REDACTED] NWD; [REDACTED] NWK; [REDACTED] NWK; Williamson, Eileen L NWO; Farmer, Monique L NWO; Johnston, Paul T HQ@ NWO; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD02; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
M SAW
Cc: [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02
Subject: RE: WM Talking Points for 21 June stakeholder call (UNCLASSIFIED)
Attachments: 2011 Missouri River Flood Talking Points 21 Jun 2011.docx

Classification: UNCLASSIFIED
Caveats: NONE

fyi

Classification: UNCLASSIFIED
Caveats: NONE

2011 Missouri River Flood Talking Points
Missouri River Water Management
21 June 2011

We posted the updated reservoir forecast on the web this afternoon. Heavy rain over South Dakota and northern Nebraska has forced us to make several changes to our planned releases from the lower 4 reservoirs.

Releases from Oahe reservoir were reduced from 160,000 cfs to 150,000 cfs this morning due to very high flows on the Bad River, which enters the Missouri River just downstream of Pierre, SD. The release reduction was necessary to manage the Big Bend pool level, Big Bend reservoir has very little flood control storage. Releases from Oahe will be returned to the 160,000 cfs rate as soon as flows on the Bad River recede, likely within the next day or two.

Big Bend releases were increased from 160,000 cfs today to 163,000 cfs and will be further increased to 165,000 cfs tomorrow. They will remain at that level for a week to 10 days to help manage the Big Bend pool level.

Releases from Fort Randall were reduced 5,000 cfs this morning, to 138,000 cfs, due to expected high inflows into Gavins Point reservoir from last night's rain. They will be held at that level for several days. Releases will eventually be stepped up to approximately 157,000 cfs.

Releases from Gavins Point dam will be increased to 155,000 cfs tomorrow morning (Wednesday) and to 160,000 cfs on Thursday morning. No additional release increases are planned at this time.

Releases for the remaining two dams are as follows:

- Fort Peck – releases remain at 60,000 cfs
- Garrison – releases remain at 150,000 cfs

The forecast is based on best available information at this time; actual releases are based on conditions on the ground. Peak releases are expected to continue well into August.

The mountain snowpack continues to decline.

Above Fort Peck: peaked at 141 percent of the normal peak accumulation, currently at 58%, down 59% from this year's peak

Fort Peck to Garrison: peaked at 136 percent of the normal peak accumulation, currently at 63%, down 54% from this year's peak

As of June 21

North Platte: peaked at 156 percent of the normal peak accumulation, currently at 43% (-72%)

South Platte: peaked at 150 percent of the normal peak accumulation, currently at 35% (-77%)

NWO

From: Tom & Karla Waters [waters4@ix.netcom.com]
Sent: Tuesday, June 21, 2011 6:02 PM
To: Waters Tom & Karla
Subject: ***RIVER UPDATE***MLDDA***RIVER UPDATE***

Importance: High

Missouri River Joint Information Conference Call Report

June 21, 2011

Friends:

The Missouri River Joint Information Center held a conference call this evening from the Division offices in Omaha, Nebraska. Mr. Erick Blechinger, at the Missouri River Joint Information Center, hosted the call. The following is information from the call:

Opening remarks:

The Phone Number for the Joint Information Center is:

(877) 214-9110.

The MRJIC website is: MRJIC@USACE.ARMY.MIL <mailto:MRJIC@USACE.ARMY.MIL>

The Public is encouraged to use the phone number or website to contact the Information Center with questions or concerns.

The Joint Information Center is open 7am-8pm. Phone calls are forwarded during non-working hours and will be answered 24/7. The Joint Information Center responded to 19 media requests for Kansas City and Omaha today.

LEVEE BREACH

No new levee breaches today

LEVEES OVERTOPPING

Federal Levee L-550 near Rock Port, Missouri is overtopping at approximately River Mile 535.5. The Local sponsor has determined the overtopping is too severe for any flood fighting activities to protect this levee. As of this evening, the levee is still holding together.

Federal Levee R-548 Across the River from L-550 is overtopping. Sponsor has placed some sandbags on the levee and no water was seen on the levee top today.

Major flood fighting is ongoing at Levee L-536 near Rock Port

Current Levee Breaches:

L-575 Near Hamburg, Iowa

Union Township, Near Craig, Missouri

Holt County #10, Big Lake, Missouri

Current Levee Overtoppings:

L-550 Near Rock Port, Missouri

R-548 Near Brownville Nebraska

Current Weather Conditions

The current weather system is beginning to move North and East making its way out of the Missouri River Basin as the Low Pressure moves away. There will be only a few lingering spotty showers Wednesday into Thursday East of the Missouri River. The North East corner of North Dakota may see some areas of 1' rainfall. For the most part, Montana and the Western Dakotas will begin drying out. Another system will be moving in from the Pacific on Friday and Saturday with rainfall of less than 1" for the next five days total.

There has been a Change in Releases

Heavy rains in the last 24-48 hours has caused the U.S. Army Corps of Engineers to make changes in the current release schedule.

Gavins Point Releases will be increased to 160,000 cfs by Thursday Morning.

Water Release and Reservoir Information:

The Reservoir Control Center will adjust releases with ever changing conditions. Daily planned releases will be posted each day on the Division website around 4:00-4:30 each day.

Weather across the basin has impacted the release schedule for the reservoir system. The reservoir control center has very little flexibility remaining. Oahe, Big Bend and Fort Randall reservoirs all received high inflows. To best manage the system several changes are being made. Oahe will be reduce from 160,000 cfs to 150,000 cfs to allow more room in Big Bend and keep Big Bend from rising too fast. This will be a short-term change and Oahe will go back up to 160,00 in a few days. Releases from Randall will be reduced from 143,000 cfs to 138,000 cfs to reduce flows in to Gavins Point, which is also seeing high inflows.

Current plans for the reservoirs are as follows:

Fort Peck 60,000cfs today and hold levels are declining

Garrison 150,000 cfs today and to 156,000cfs tomorrow for a week to 10 days.

Oahe 150,000cfs today and hold for a few days

Big Bend 163,000cfs today and to 165,000 cfs tomorrow then hold

Randall 138,000cfs today, then to 157,000 cfs depending on the Gavins Point pool

Gavins Point 150,000 cfs today and 155,000 cfs tomorrow and to 160,000 cfs by Thursday Morning.

Peak Releases are expected to stay high well into August.

Releases are based on conditions on the ground and subject to change.

Kansas Reservoirs Releases:

Milford is releasing Minimum Flows

Tuttle Cree is releasing Minimum Flows Perry is releasing Minimum Flow

Releases from the Truman Reservoir in Missouri have increased to 15,000 cfs for power generation.

Snow Pack Update:

The snow above Fort Peck peaked at 141% of normal and is now down to 58% of normal. The snow in the reach between Fort Peck and Garrison (primarily the Yellowstone basin) peaked at 136% and is now down to 63%. The snow in the North Plate basin peaked at 150% of Normal and is currently down to 43% and the snow pack in the South Platte Basin peaked at 150% of Normal and is down to 35% of Normal.

Department of Transportation Update:

Interstate I-29 Update:

Interstate I-29 is closed from Mile Post 110 in Missouri north to Mile Post 10 in Iowa. Iowa DOT may close an additional 10 miles north to Mile marker 20 in the next few days. I-29 is also closed from Mile markers 55 to 71 beginning near the Council Bluffs/Omaha area and north.

The Global Detour for I-29 is: I-35 North to I-80 west to I-680 to I-29 north of Council Bluffs

In Iowa: Highway 2 crossing the Missouri River is closed.

In Missouri: US Highway 159 in Holt County is closed-This also closes the Bridge to Rulo. US Highway 136 in Atchison County is Closed cutting off access to the Brownville Bridge.

Nearly all crossing across the Missouri River are closed in Northwestern Missouri. The best detour across the River is US Highway 36 at St. Joseph or bridges in the Kansas City area. The best route for traffic coming from the west is I-70.

In Nebraska, Highway 159 at Rulo is closed and US 136 is closed at Brownsville.

High water and roads closures are impacting traffic flow and motorists are encouraged to plan accordingly and drive with care. High water is expected through August so many of these roads will remain closed for an extended period. Currently 40+ miles of I-29 are closed.

Omaha District Update:

The Omaha District continues to help build many levee projects and improvements as they continue to be in a full flood fight at several locations within their area of operations.

Water is now up on the Ditch #6 levee protecting Hamburg, Iowa. The water is now at 913.57' and there is a little over 5' of freeboard at this time. Teams from the Omaha District are on the ground and in the air monitoring levees.

Kansas City District Update:

The KC District is providing technical and direct assistance to Missouri River stakeholders at many locations. The Kansas City main area of concern is from Rulo, NE to Kansas City.

The Kansas City District will have new flood inundation maps with the 160,000 cfs releases figured in by the end of the week.

Tributaries remain in good shape on the lower Missouri River.

The Kansas City District has 3.4 million sandbags on hand, 8 pumps and no sandbagging machines. Currently, there is 1 sandbagging machine operating in Rock Port, 1 in Beverly and 1 in Craig. Contracts are in place for more sandbag machines and pumps, if needed.

The Missouri River is closed to all traffic from River Mile 450 to Gavins Point Dam.

The KC District EOC is Current at Level II, subject to changes based on river conditions.

The KC District is conducting daily recon flights to survey River conditions.

For additional information during the day, follow the Missouri Levee & Drainage District Association Twitter site at: @Missourilevees

Stay Safe!

Tom Waters

Missouri Levee & Drainage District Association

Contact Information:

Tom Waters, Chairman

Missouri Levee & Drainage District Association

36257 Highway Z

Orrick, Missouri 64077

(816) 770-5562

(816) 591-7949 Cell

Northwestern Division:

www.nwd.usace.army.mil

twitter.com/#!/NWDCorps

KC District:

www.nwk.usace.army.mil

www.facebook.com/usace.kcd

twitter.com/#!/KC_USACE

Omaha District:

www.nwo.usace.army.mil

www.facebook.com/OmahaUSACE

twitter.com/#!/OmahaUSACE

The Phone Number to the Missouri River Joint Information Center is:

(402) 996-3877 or Toll Free (877) 214-9110

The E-mail Address for the Missouri River Joint Information Center is:

MRJIC@USACE.ARMY.MIL

The Facebook page for the Missouri River Joint Information Center is:

<http://www.facebook.com/OperationMightyMO>

The Phone Number for the Kansas City Emergency Operations Center is:

(816) 426-6320

The Phone Number for the Omaha Emergency Operation Center is:

(402) 995-2448

Levee Status Charts are now available on the KC District Website at:

[http:// www.nwk.usace.army.mil/Flood/InundationMaps.cfm](http://www.nwk.usace.army.mil/Flood/InundationMaps.cfm) This includes Non-Federal and Federal levee status in Kansas City Districts area of

responsibility. Once on page click Non-Federal Levee Status and Federal Levee

Status to view chart. Chart shows predicted freeboard of levees based on

currently planned 150kcfs releases from Gavins Point.

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 5:28 PM
To: DLL-CENWO-OD-GA; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] HQ02;
[REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] D NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] @ POD; [REDACTED] NWO
Subject: Today's staff notes (UNCLASSIFIED)
Attachments: 6-21 Garrison Flood Fight Daily Staff Notes.docx

Classification: UNCLASSIFIED
Caveats: FOUO

All,
I apologize for the delay in getting today's notes out. Too many unplanned interruptions again today... I did not attach the current 3-week schedule as it changed again, rather significantly and has rendered several issues addressed again today irrelevant. I'll try again tomorrow.

[REDACTED] P.E.
Operations Project Manager
Garrison Project

Classification: UNCLASSIFIED
Caveats: FOUO

**Garrison Flood Fight
Daily Staff Notes
Tuesday, 21 June 2011**

Forecast/Flows/River Monitoring:

- Lake Sakakawea:
 - Current Reservoir Elevation: 1854.30 . Yesterday's elevation: 1854.15
 - Current Tail water Elevation 1684.57 . Yesterday's elevation 1684.56
 - Stilling Basin (a.k.a. Spillway Pond) elevation: 1686.5
 - Estimated Inflows today: 188,000 cfs. Inflows yesterday: 165,500 cfs.
 - Releases: 150,000 cfs.
 - Spillway gates 1 through 28 are open 2 feet.
 - Day water release distribution: Power Plant - 31,000 cfs, Regulating Tunnels - 58,000 cfs, Spillway - 61,000 cfs.
 - Night water release distribution: Power Plant - 16,000 cfs, Regulating Tunnels - 73,000 cfs, Spillway - 61,000 cfs.
 - We are shifting our releases between the regulatory tunnels and the power plant to provide load control for WAPA. Scheduled load and water release changes are being made at 0800 and 2000 hours.
- Fort Peck releases at 60,000 cfs today.
- Missouri River Elevations:
 - Bismarck gage: Currently 18.92 feet. Yesterdays gage was 18.82 feet. Protection measures in Bismarck are to 21.6 feet with a forecasted crest of 20.6 feet.
 - Williston gage: The river gage as of yesterday afternoon was 30.53 feet. Gage was 30.43 yesterday morning. Previous record stage: 28.0 feet.
- Current Snowpack: Snow pack data not updated for today...
 - Ft Peck - crested at 141% of normal peak; currently 61% of the normal peak remains.
 - Garrison - crested at 136% of peak; currently 65% of the normal peak remains.

Garrison Dam Surveillance:

- Surveillance: Team Leader, [REDACTED] Instrumentation: Team Leader [REDACTED]
- Spillway: Inspection team noted different flow patterns on the walls below gates 27 and 28. Power plant personnel checked gates and noted no debris or anything unusual at the gates. Front of spillway nose piers and gates inspected from boat and in good condition, Depth finder suggests that minimal scour had occurred in front of gates 22 through 28 (est elevation 1816 to 1828 ft), but more has been experienced in front of remainder of spillway (el 1813 to 1815 in front of gates 3 through 22, and el 1812 in front of gates 1 and 2.)
- Embankment: Nothing new to report.
- East Abutment: All seeps (1 though 4) have enlarged in extent, but discharge remains clear. Project received couple more isolated rain events. Once we have

period of a day or two of dry weather, these areas will be mapped again and plotted.

- Tailrace: Nothing new reported.
- Surveillance Plans: Requirement for 24 hour surveillance is a rapidly moving target. Yesterday's revised 3-week forecast changed the record pool again. This is making it extremely difficult to schedule and manage personnel schedules.
- Surcharge of Reservoir: After spending considerable time yesterday to evaluate gate openings/releases to meet the forecasted surcharge, the surcharge forecast changed by over a half foot late yesterday. All gate openings will need to be re-evaluated.

Snake Creek Embankment/ Lake Audubon:

- Surveillance: Nothing to report.
- Lake Audubon has been filled to elevation 1849.5 to utilize additional storage. Currently we do not plan to increase that elevation.

Williston Levee:

- POC's [REDACTED], [REDACTED], [REDACTED]
- The inspection teams recorded three new pin boils today. The situation with the larger boil area remains about the same with one of those boils still active and still putting out some fines. According to Shannon's figures we still have a minimum of 1.9 feet of freeboard and more toward the north.
- Still dealing with the City not believing anything we tell them. They want to send their own consultant out to measure freeboard? At yesterday's meeting, one councilman claimed that he'd done his homework, and wanted to know why we weren't releasing the 660,000 cfs that the spillway was designed to release? They also asked for a guarantee that the levee would not fail, or overtop. We're no longer sure how to deal with the City...

Natural Resources:

- POC's [REDACTED], cell: [REDACTED], [REDACTED] (781) 223-0001
- East Diagonal gate is manned/open from 0600-1830 weekdays and is only staffed from 0600-0700 on weekends. Contractors working after these hours will need to contact Natural Resources to have them open the gate.
- Mike Key and Brent Cossette, from the District Office are here to assist the Garrison Project through the 4th of July weekend.
- Still trying to work with Bis-Man Security to establish a contract for parking and traffic control on weekends. Our parking plan is being revised by Linda. Everyone will be expected to follow this plan to ensure an orderly visit for the public, as well as safety of our personnel.

Outside Maintenance:

- Will flush the drains between the man-holes which drain into headwall of tunnel #8.

- Chuck conveyed that we are losing the spillway pond recreation area to erosion. He will assess the situation today so we can determine whether to try and protect it by armoring the bank, or if we should simply remove all assets we can?
- Will coordinate adding rock to the lower end of the tailrace riprap on both East and West banks, as the current and fluctuating tailrace elevations are back cutting the riprap. Current conditions will not allow access on the East bank as it is too muddy. Work will be pursued as soon as conditions permit.
- Temporary water line: If a leak is noted, notify your supervisor, [REDACTED] or I ASAP. Also notify City of Riverdale, "Clay" at (701) 471-6433 or [REDACTED]. [REDACTED] Shutoff valves located on the line. A drawing showing the locations of these valves is posted in the Outside Maintenance shop. A valve key to close the valves is located immediately inside the front door of the maintenance building.

Power Plant:

- Going back to four units generating today and backing off again this evening to meet WAPA load demands. Changes will be made at 8:00 am and 8:00 pm. Load changes are scheduled to be made through the weekend to assist WAPA with anticipated load demands.
- IES to request start up of Unit 5 either today or tomorrow.

Weather/Safety:

Today: Overcast with rain showers at times. High 66F. Winds NNE at 10 to 20 mph. Chance of rain 50%.	Tonight: Showers early with some clearing overnight. Low 54F. Winds N at 10 to 15 mph. Chance of rain 50%.	Monday: Sunshine and clouds mixed. High around 70F. Winds N at 5 to 10 mph. Chance of rain 20%.
---	---	--

- Mike Morris and Charles Sorensen have volunteered to work on evacuation plans. I still need to coordinate with them on development of these plans.

Needed Resources:

- Overview maps to be utilized for dam safety surveillance were delivered today.
- Currently working with ACE-IT and looking into upgrading our radios so that we can utilize them effectively for local communication. Cell phone coverage is spotty in several locations. Signal booster has been ordered to improve cell phone reception.
- Contract with the Conservancy District for rip rap repairs was awarded this past Saturday. Contract covers next 8 weeks with labor and equipment needs assumed for 3 days per week. OD-GA Tech Support (Pem) will need to track actual days used on Contract.
- Kim has the contract specifications for crane services necessary to place stop logs for the inspection of the regulatory tunnels. Inspection was being scheduled for

the week of July 11th based on the need to surcharge, however that has also changed. [REDACTED] to coordinate Omaha inspection team members needed, as well as which repair product needs to be ordered.

Any resource needs, safety issues, or emergencies should be directed to your team leaders/POC immediately. If they cannot be reached contact [REDACTED]
[REDACTED]

OPM Notes:

- Increased surcharge, and required freeboard, will complicate our gate operations. We will lose flexibility to utilize the regulating tunnels and will eventually be in a position where spillway gates will have to be operated to accommodate changes in plant loads.
- USACE Survey crew is performing river profiles from Garrison to Oahe, today and tomorrow.
- 24 hour surveillance will be required to begin this weekend. We will go to 24 hour surveillance beginning with the new crews on Sunday, June 26th.
- All personnel working on dam surveillance or instrumentation readings are to be wearing safety vests. All personnel working traffic control are also required to wear safety vests.
- Request has been made to USGS to survey the Spillway channel and the river flow below the confluence of the spillway and tailrace channels. Survey is scheduled to be done on 22 June.
- Col Ruch and entourage toured the project today. Visited the spillway and regulating tunnels, took photos and left.
- Participated in two hours of training on utilization of Androids, however did not have the required 3-G signal. More training tomorrow...

From: Fong, Cecily S. [cfong@nd.gov]
Sent: Tuesday, June 21, 2011 5:25 PM
Subject: Media Advisory - Flood Update June 22, 9:00 am

MEDIA Advisory

Flood Update

June 22, 9:00 a.m.

Flood Updates will continue at 9:00 a.m. through Friday, June 24

Flood Updates Will Occur Once Weekly on Wednesday's at 9:00 a.m.

Beginning June 29, 2011 Until Further Notice

WHAT:

Missouri River Flood Update

WHY:

Flood Update

WHEN:

Wednesday

June 22

9:00 AM

WHERE:

Tom Baker Room

221 N Fifth Street, Bismarck

WHO:

Jeff Heintz, Bismarck EOC Director

Other jurisdiction officials/staff

PHOTO

OPPORTUNITIES:

Yes

MEDIA CONTACT:

Gloria David

Public Information Officer

City of Bismarck

(701) 355-1306

(701) 220-2470

Agenda

1. Opening Remarks
2. Remarks by Special Guests
3. Corps of Engineers Report
4. Bismarck Situation Report
5. Mandan Situation Report
6. Burleigh County Situation Report
7. Morton County Situation Report
8. Utility Company Reports
9. Closing Remarks

Note: Questions and interviews available after the close of the update.

NWO

From: MRJIC
Sent: Tuesday, June 21, 2011 5:15 PM
Subject: UPDATE: Missouri River Joint Information Center Call 5 p.m. (CDT) ***Original Number Still Being Used***

The Missouri River Joint Information Center's daily call has reached its maximum number of call in ports. If you are unable to connect this evening, please call the Joint Information Center for any questions or updates needed, 1-877-214-9110.

To listen to this or previous recordings, please visit our website.
<http://www.nwo.usace.army.mil/html/op-e/flood2011/pressconf_arch.html>

Thank you,

MRJIC

-----Original Message-----

From: MRJIC
Sent: Tuesday, June 21, 2011 2:33 PM
Subject: Missouri River Joint Information Center Call 5 p.m. (CDT) ***Original Number Still Being Used***

ORIGINAL CALL NUMBER STILL BEING USED

Reminder: The daily call will occur at 1700hrs/CT. Call in information is as follows:

877-336-1828
Access Code: 1054750#
Security Code: 1234#

This call is intended for Congressional Delegation, Tribes, State Government, Local Government, and Press. Please do not distribute the number to the general public, the JIC is set up with email and call in accessibility to answer questions for the general public.

General format includes updates from the Hydrometeorological Center (HPC), Iowa Department of Transportation, Missouri Department of Transportation, Nebraska Department of Transportation, the Missouri River Basin Water Management Division, USACE Omaha District Emergency Operations Center, USACE Kansas City District Emergency Operations, followed by a Questions and Answer opportunity.

To listen to the previous recordings, please visit our website.
<http://www.nwo.usace.army.mil/html/op-e/flood2011/pressconf_arch.html>

For bios of USACE staff on 5 p.m. call, please visit our website.
<<http://www.nwo.usace.army.mil/html/op-e/flood2011/Flood Press Packet Jun 2011 QR.pdf>>

Thank you.

MRJIC

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 5:06 PM
To: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
 [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
 [REDACTED] NWO; [REDACTED] NWO; DLL-CENWO-OD-FP OPER; [REDACTED] NWO; [REDACTED]
 [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Cc: [REDACTED] NWD02; Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED]
 [REDACTED] NWD02; [REDACTED] NWD02
Subject: Lake Level Recorder (UNCLASSIFIED)

All:

The new lake level recorder has been installed. We should continue our manual readings at least four times a day to verify its accuracy. After we are comfortable with its reliability, we can return to daily verification.

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: [REDACTED] MAJ NWD
Sent: Tuesday, June 21, 2011 4:36 PM
To: Farhat, Jody S NWD02
Cc: Thomas, Kimberly S NWO
Subject: FW: Update: NWO Changing Release Schedule! (UNCLASSIFIED)

FYI

V/R

[REDACTED]
Contingency Operations Officer
Readiness and Contingency Operations
Northwestern Division
US Army Corps of Engineers
Desk: [REDACTED]
Cell: [REDACTED]

[REDACTED]@usace.army.mil

[REDACTED]@usace.army.smil.mil

Emergency Satellite Phone: [REDACTED] Emergency Cell: [REDACTED]

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-----Original Message-----

From: [REDACTED] HQ02 On Behalf Of CE-UOC HQ02
Sent: Tuesday, June 21, 2011 2:33 PM
To: [REDACTED] HQ02; [REDACTED] COL HQ02; [REDACTED] NWD
Cc: UOC Internal; [REDACTED] HQ02
Subject: FW: Update: NWO Changing Release Schedule! (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Ma'am, Sir,

Update on the reservoir release schedule from NWD.

1. NWD Commander, NWO & NWK Commanders, SES, and Jody Farhat with NWD Water Management had a discussion today regarding the planned releases out of Gavins Point. BLUF: Tomorrow, we will raise the releases out of Gavins Point from the current level of 150K cfs, to 155K cfs, followed by another increase to 160K cfs on Thursday.

2. Right now, our leaders are reaching out to Governors, and other stakeholders, as quickly as possible to update them on this change prior to the 1700 CST stakeholders call. It will also be announced during the call.

3. The NWD SITREP tonight will codify this with more specific intrasystem changes, but we wanted to share this important change with HQUSACE as soon as the decision was made. Address any questions or concerns to the undersigned.

V/R

[REDACTED]

MAJ, EN

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 4:30 PM
To: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] S NWO; Farhat, Jody S
NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Bertino,
John J Jr NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Flood Report - #19 Fort Peck (UNCLASSIFIED)
Attachments: Wolf Point polishing lagoon 21june2011.docx; SPILLWAY WALLS 20JUNE2011.pdf; Fort
Peck Dam Surveillance Activities 20 June 11.docx

Classification: UNCLASSIFIED
Caveats: NONE

Releases from Fort Peck are 60,000 cfs with 47,000 cfs through the spillway and 13,000 cfs through the power plant. Fort Peck's pool elevation was 2251.91 this morning, a drop of 0.1 ft. Our 24 hour surveillance continues with no issues on the dam or spillway. Surveillance Activities and Spillway Wall Measurements are attached.

[REDACTED] and I went to Wolf Point today to look at erosion concerns next to their sewage lagoon. Trip report is attached.

[REDACTED], P.E.
U.S. Army Corps of Engineers
Operations Project Manager
Fort Peck Project
Fort Peck, Montana 59223
PH: [REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE



**US Army Corps
of Engineers**
Omaha District

Project:	2011 Missouri River Flooding				Sheet No.	1/6
Subject:	Wolf Point Wastewater Treatment Lagoon					
Computed by:	CJM	Date:	21 June 2011	Checked by:		Date:

PURPOSE

The purpose of this document is to summarize the site visit taken to Wolf Point, MT, on 21 June 2011. Additionally, conclusions related to the site visit are discussed.

SITE VISIT

_____ travelled to Wolf Point, Montana, on 21 June 2011 to observe erosion of the left bank of the Missouri River upstream from the polishing lagoon (final stage of treatment) at the wastewater treatment plant (see Figure 1).

Figure 1



Photographs 1-4 include labels for orientation.



**US Army Corps
of Engineers**
Omaha District

Project:	2011 Missouri River Flooding					Sheet No.	2/6
Subject:	Wolf Point Wastewater Treatment Lagoon						
Computed by:	CJM	Date:	21June2011	Checked by:		Date:	

Photograph 1 Looking upstream from approximately 100 ft upstream of southwest corner of polishing lagoon at erosion of banks.





**US Army Corps
of Engineers**
Omaha District

Project:	2011 Missouri River Flooding					Sheet No.	3/6
Subject:	Wolf Point Wastewater Treatment Lagoon						
Computed by:	CJM	Date:	21 June 2011	Checked by:		Date:	

Photograph 2 Looking downstream at southwest corner of polishing lagoon. Trucks are near corner of lagoon. Stakes in foreground placed by city staff to monitor progression of erosion.





**US Army Corps
of Engineers**
Omaha District

Project:	2011 Missouri River Flooding					Sheet No.	4/6
Subject:	Wolf Point Wastewater Treatment Lagoon						
Computed by:	CJM	Date:	21 June 2011	Checked by:		Date:	

Photograph 3 Looking upstream from near southwest corner of polishing lagoon.





**US Army Corps
of Engineers**

Omaha District

Project:	2011 Missouri River Flooding					Sheet No.	5/6
Subject:	Wolf Point Wastewater Treatment Lagoon						
Computed by:	CJM	Date:	21 June 2011	Checked by:		Date:	

Photograph 4 Looking at river from southwest corner of polishing lagoon (discharge is approximately 80,000cfs)



CONCLUSIONS

Erosion is expected to continue progressing at this site. However, at this time, erosion is not expected to progress to a point where it would threaten the integrity of the polishing lagoon berm.

Reasons for concluding that the erosion will not progress to the berm include:

- Discharges are expected to continue to recede.
- Velocities do not appear to be excessive at this time.
- There is an approximate distance of 150 ft between the corner of the lagoon berm and the river

Erosion progress is being carefully monitored by city staff using numbered lathe stakes. If continued erosion progresses to a point where failure is imminent, further consideration should be given to adding riprap protection to prevent failure. However, it was noted that water quality in the polishing lagoon is higher than that in the river when measured.



**US Army Corps
of Engineers**

Omaha District

Project:	2011 Missouri River Flooding					Sheet No.	6/6
Subject:	Wolf Point Wastewater Treatment Lagoon						
Computed by:	CJM	Date:	21June2011	Checked by:		Date:	

Therefore, consequences of lagoon berm failure are likely minimal. Replacement cost of the lagoon berm would need to be compared against the cost of riprap protection.

The site may be a potential candidate for repair and stabilization under USACE Section 14 Study authority which includes a 65/35 USACE/sponsor cost share.

**Fort Peck Dam
High Reservoir Surveillance Activities
20 June 2011**

- Reservoir Elevation: 2252.04 as of 0100.
- Project Releases: 51,950 cfs from spillway and 13,210 cfs from the powerhouse as of 0100.
- Coulee Inspection:
 - Coulees D and E: No change. There are large areas where the ground is saturated with standing water. The roadway was dry.
 - Coulee A: No change. The coulee was dry.
 - Coulee B: The lower reaches of the coulee were muddy; however, this area was drier than it was on 19 June.
 - Coulee C: The area between MH#9 and MH#8, where the boil previously existed, was muddy, no flow. Starting at approximately 100-feet downstream of MH#9, the ditch on the side of the roadway was wet. Further downstream in the ditch a trickle flow was present. This flow is either from seepage bypassing RW#9 or possibly from precipitation exiting the adjacent slope, or a combination of both. With 2-1/2 to 3 consecutive days of dry weather, the amount of flow in the ditch was less than it was on 19 June.
- Upstream Slope: The riprap and the upstream slope remains unchanged. The upstream slope is in good condition with no erosion or riprap displacement identified.
- Embankment Toe and Relief Well Area:
 - The embankment toe area and the area between the rock toe and the relief channel was inspected. There was no seepage or other conditions of concern identified.
 - Relief Well Channel: The water in the relief well channel was clear.
 - The left abutment of the main embankment was inspected with no areas of concern identified.
- Dike Section:
 - The seepage area at Station 95 – 100 was wet in the ditch at the dike section toe. This area has been well documented in past inspection reports and appears to fluctuate slightly with precipitation runoff, but is basically unchanged. Although this is a fairly large area with ponded water, there was no flow evident in the spill lined ditch.
 - Station 115: Essentially, there was no change since flags were placed in this area on 5 June. Wet, saturated soil with little flow.
 - Station 162: No change.
 - Station 169: The seepage area at Station 169 has exhibited soft, saturated soils; some standing water in tire ruts; and only a trickle flow from the area. Historically, as discussed in past Periodic Inspection reports, the dike section wet areas usually contain saturated soil and standing water only, with no

**Fort Peck Dam
High Reservoir Surveillance Activities
20 June 2011**

boils having been noted. During this high water event, until today, no moving water/boils have been identified in any of the seepage areas. This evening, a very small boil was identified at Station 169. See Photos 1 and 2.

Pertinent Information:

Lake Elevation: 2251.94
Location: 11.7-feet immediately downstream of seepage pipe
169/2.35

Water Surface in

Pipe 169/2.35: 2224.4
Elevation of Boil: 2224.4
Size: Approximately the diameter of a pencil
Flow: Minimal vertical flow, trickle
Condition: Clear, no movement of material

Summary: Due to the Size, Flow, and Condition of this boil, it is not something to become alarmed about at this time. The water surface elevation in 169/2.35, and the extent of the saturated area, has not changed for at least the past two weeks. This area will continue to be closely monitored and corrective action taken if conditions change.

- **Right Abutment Area:** Both of the two seepage areas were noticeably drier than they were on 19 June, especially the upper area. The lower seepage area was still wet with standing, saturated soil; however, the area was slightly smaller and with no flow. The upper area only had water standing in surface depressions. If the upper area continues to dry out, it can be reasonably concluded that this seepage area is not fed by the reservoir, but rather water from the saturated abutment from due to precipitation exiting the slope at that location.
- **Spillway:**
 - Observed gates being closed to reduce flows from 52,000 cfs to 47,000 cfs. All gates were closed either 0.3' or 0.4'.
 - Took weekly measurements of spillway cutoff joint separation and tilt. Added rows for measuring tilt using 4' level and measuring distance from plumb. Tables have been updated on spreadsheet in branch shared drive "SpillwayMonitoring_20June2011.xlsx". Only changes were by 0.01' and are likely due to accuracy of methodology.
 - Took USGS personnel down to both sides of spillway to repeat scour measurements. Results were very similar to reading taken on 16 June 2011. The only location with a notable difference was on right wingwall between RW5 and RW6. The new reading was 73-feet compared to the 16 June 2011 reading of 65-feet. However, the 16 June reading at this location was highly uncertain, and the operator felt that this was a much more accurate reading (not only for this location, but all locations.)

**Fort Peck Dam
High Reservoir Surveillance Activities
20 June 2011**

- Observed that additional Bearpaw shale had fallen in on right bank downstream of wingwall (See Photo 3)
- Observed that hydraulic jump has moved upstream (See Photo 4). Possible reason for this is higher tailwater elevations along with lower releases. Reason for higher tailwater elevations is unknown at this time, but was measured to be around 2-feet (actual increase in tailwater elevation is highly uncertain due to excessive turbulence and wave action).
- Instrumentation Readings Obtained on 20 June:
 - Relief Well Flows
 - Left Abutment Relief Wells
 - Selected Seepage Pipes
 - Read twice, (at 1700 and 1900) East, West and Coulee "D" Flumes, and Toe Drain Weir Box.
 - Range 18.1, 19.5, and 20 relief well piezometers.
 - Downstream water table piezometers.
 - PD 95/7
 - Seepage Pipe 165/2.37



Photo 1- Seepage area at Station 169.

**Fort Peck Dam
High Reservoir Surveillance Activities
20 June 2011**



Photo 2 – Small boil at Station 169.



Photo 3

**Fort Peck Dam
High Reservoir Surveillance Activities
20 June 2011**

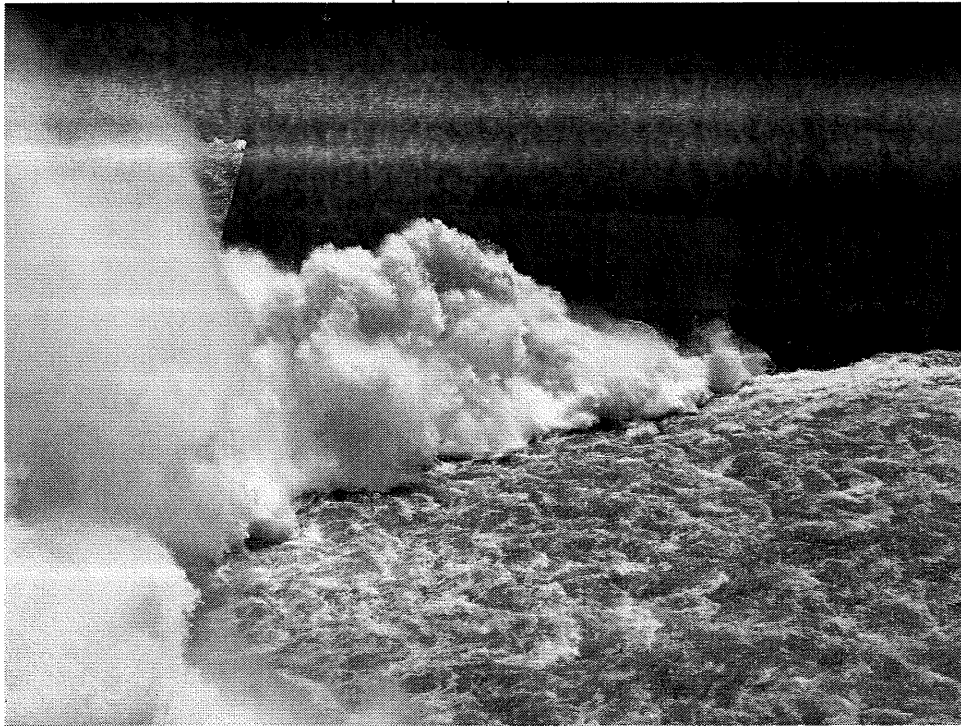


Photo 4

[REDACTED] NWO

From: McMahon, John R BG NWD
Sent: Tuesday, June 21, 2011 4:23 PM
To: Temple, Bo M MG HQ02; Grisoli, William T MG HQ02; [REDACTED] HQ02;
[REDACTED] HQ02
Cc: Anderson, G Witt NWD; [REDACTED] NWD; Tipton, Robert A Col NWD; Blechinger, Erik T NWO; Farhat, Jody S NWD02; [REDACTED] NWD
Subject: MR Release Increases---21 June

Sir:

Fysa--we plan to announce another series of release increases today at our daily 1700 CST MRJIC call with Codels et al. The weather system we've been monitoring closely over the pasat 72 hours has generated inflows above and below Gavins such that we will increase releases out of GP to 155K tomorrow and to 160K on Thurs. We dropped releases out of Oahe to 150K earlier today as well as releases out of Ft Randall down to 133K to slow down the flow rate into Gavins to give us time to move water out at GP. Will also increase releases thru Big Bend to 165K and then slowly raise releases over the next couple of days out of Oahe back to 160K and from Ft Randall to 148K--will continue to monitor inflows in all the Tribs above and below GP and make further adjustments over the next few days. We assessed the Downstream impacts of all these immediate changes, and have determined a minimal amount of increased risk to D/S communities as a result of these changes. Below GP, we remain within the projected band of inundation previously posted on the Map Website. CTM.

Vr/John

Burke, Linda F NWO

From: Anderson, G Witt NWD
Sent: Tuesday, June 21, 2011 3:27 PM
To: [REDACTED] NWD
Cc: Farhat, Jody S NWD02
Subject: RE: Memo (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Go ahead [REDACTED] Thanks

-----Original Message-----

From: [REDACTED] NWD
Sent: Tuesday, June 21, 2011 9:18 AM
To: Anderson, G Witt NWD
Cc: Farhat, Jody S NWD02
Subject: FW: Memo (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Witt, I am thinking that as busy as you are you would probably want me to forward this on to the WM Board, but thought I'd ask first if you want to send it on yourself?

-----Original Message-----

From: [REDACTED] NWD
Sent: Tuesday, June 21, 2011 8:40 AM
To: [REDACTED] NWD
Subject: FW: Memo (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

-----Original Message-----

From: [REDACTED] NWD
Sent: Tuesday, June 21, 2011 8:37 AM
To: [REDACTED] NWD
Subject: FW: Memo (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

REGULATION FORECAST 06/21/11

		FTPK			GARR			OAHV			BEND			FTRA			GAPT			GE	SYSTEM SG	DSG								
		24EL	24ID	2400	24GE	24EL	24ID	2400	24GE	24EL	24ID	2400	24GE	24EL	24ID	2400	24GE	24EL	24ID				2400	24GE						
21	T	2251.8	48.0	60.0	5.13	1854.3	193.4	150.0	9.29	1619.2	219.2	150.0	13.93	1420.2	170.0	160.0	7.92	1367.9	220.0	138.0	9.38	1207.9	154.6	150.0	2.75	48.40	72432	388	T	21
22	M	2251.7	47.0	60.0	5.12	1854.6	190.4	150.0	9.30	1619.4	200.1	150.0	13.95	1420.2	164.0	165.0	7.70	1369.3	205.0	138.0	9.48	1207.5	149.4	155.0	2.73	48.29	72703	271	M	22
23	T	2251.6	45.0	60.0	5.12	1854.7	175.6	150.0	9.31	1619.5	168.0	160.0	13.95	1420.3	170.0	165.0	7.63	1369.9	175.9	145.0	9.52	1206.7	150.7	160.0	2.69	48.23	72789	87	T	23
24	F	2251.5	44.0	60.0	5.12	1854.7	163.0	150.0	9.31	1619.5	171.0	160.0	13.96	1420.4	167.0	165.0	7.57	1370.4	173.0	150.0	9.55	1206.3	154.3	160.0	2.66	48.18	72841	51	F	24
25	F	2251.3	43.0	60.0	5.11	1854.8	155.2	150.0	9.31	1619.6	170.0	160.0	13.96	1420.4	164.0	165.0	7.53	1370.7	171.0	155.0	9.58	1206.0	156.1	160.0	2.65	48.14	72860	20	F	25
26	M	2251.1	39.0	60.0	5.11	1854.8	149.0	150.0	9.31	1619.6	165.0	160.0	13.96	1420.4	166.0	165.0	7.48	1371.0	171.0	157.0	9.59	1206.0	160.4	160.0	2.65	48.11	72850	-10	M	26
27	T	2251.0	38.0	60.0	5.11	1854.7	144.0	150.0	9.31	1619.6	161.0	160.0	13.96	1420.3	163.0	165.0	7.43	1371.3	170.0	157.0	9.61	1206.1	161.0	160.0	2.65	48.08	72818	-33	T	27
28	M	2250.8	37.0	60.0	5.10	1854.7	140.0	150.0	9.31	1619.6	158.0	160.0	13.96	1420.3	162.0	165.0	7.38	1371.5	169.0	157.0	9.63	1206.2	161.8	160.0	2.66	48.04	72767	-51	M	28
29	T	2250.6	36.0	60.0	5.10	1854.6	137.0	150.0	9.30	1619.6	156.0	160.0	13.96	1420.1	162.0	165.0	7.32	1371.7	168.0	157.0	9.65	1206.3	161.0	160.0	2.67	48.00	72698	-68	T	29
30	T	2250.4	35.0	60.0	5.09	1854.6	140.0	150.0	9.30	1619.5	155.0	160.0	13.96	1420.1	160.0	160.0	7.31	1371.8	162.0	157.0	9.66	1206.4	161.0	160.0	2.67	47.99	72629	-69	T	30
1	F	2250.2	42.0	60.0	5.09	1854.5	146.0	150.0	9.30	1619.5	153.0	160.0	13.96	1420.1	160.0	160.0	7.30	1371.9	161.2	157.0	9.65	1206.4	160.0	160.0	2.67	47.97	72575	-54	F	1
2	F	2250.1	50.0	60.0	5.09	1854.5	154.0	150.0	9.30	1619.5	155.0	160.0	13.95	1420.1	160.0	160.0	7.28	1372.0	161.0	157.0	9.66	1206.4	160.0	160.0	2.67	47.96	72552	-23	F	2
3	M	2250.1	56.0	60.0	5.09	1854.6	162.0	150.0	9.30	1619.4	154.0	160.0	13.95	1420.1	160.0	160.0	7.27	1372.1	160.9	157.0	9.67	1206.4	160.0	160.0	2.67	47.95	72555	3	M	3
4	M	2250.0	52.0	60.0	5.08	1854.7	168.0	150.0	9.31	1619.4	153.0	160.0	13.95	1420.1	160.0	160.0	7.26	1372.1	160.7	157.0	9.67	1206.3	159.5	160.0	2.67	47.94	72558	3	M	4
5	T	2250.0	48.0	55.0	5.08	1854.8	167.0	150.0	9.31	1619.3	152.0	160.0	13.94	1420.1	160.0	160.0	7.25	1372.2	160.5	157.0	9.68	1206.2	158.7	160.0	2.66	47.93	72557	-1	T	5
6	W	2249.9	44.0	55.0	5.08	1854.8	165.8	150.0	9.32	1619.3	152.0	160.0	13.94	1420.1	160.0	160.0	7.24	1372.3	160.4	157.0	9.68	1206.1	158.7	160.0	2.66	47.92	72546	-11	W	6
7	T	2249.7	42.0	55.0	5.08	1854.9	163.6	150.0	9.32	1619.2	152.0	160.0	13.94	1420.1	160.0	160.0	7.23	1372.3	160.2	157.0	9.69	1205.9	158.6	160.0	2.65	47.90	72546	-20	T	7
8	F	2249.6	41.0	55.0	5.07	1854.9	159.8	150.0	9.32	1619.2	152.0	160.0	13.93	1420.1	160.0	160.0	7.22	1372.4	160.2	157.0	9.69	1205.9	158.6	160.0	2.64	47.89	72494	-32	F	8
9	F	2249.5	41.0	55.0	5.07	1854.9	156.6	150.0	9.32	1619.1	152.0	160.0	13.93	1420.1	160.0	160.0	7.21	1372.5	160.2	157.0	9.70	1205.8	158.6	160.0	2.64	47.87	72458	-36	F	9
10	M	2249.4	40.0	55.0	5.07	1855.0	155.0	150.0	9.32	1619.1	152.0	160.0	13.93	1420.1	160.0	160.0	7.20	1372.5	160.2	157.0	9.70	1205.7	158.6	160.0	2.63	47.85	72417	-41	M	10
11	M	2249.2	39.0	55.0	5.07	1855.0	153.0	150.0	9.32	1619.0	152.0	160.0	13.92	1420.1	160.0	160.0	7.19	1372.6	160.2	157.0	9.71	1205.6	158.6	160.0	2.62	47.83	72370	-47	M	11
12	T	2249.1	38.0	55.0	5.06	1855.0	149.0	150.0	9.32	1619.0	152.0	160.0	13.92	1420.1	160.0	160.0	7.18	1372.7	160.2	157.0	9.71	1205.4	158.6	160.0	2.61	47.81	72313	-57	T	12
13	T	2248.9	37.0	55.0	5.06	1854.9	145.0	150.0	9.32	1618.9	152.0	160.0	13.91	1420.1	160.0	160.0	7.17	1372.7	160.2	157.0	9.71	1205.3	158.5	160.0	2.60	47.79	72246	-67	T	13
14	T	2248.8	36.0	55.0	5.05	1854.9	143.0	150.0	9.32	1618.9	152.0	160.0	13.91	1420.1	160.0	160.0	7.16	1372.8	160.2	157.0	9.72	1205.2	158.5	160.0	2.60	47.77	72173	-73	T	14
15	F	2248.6	30.0	55.0	5.05	1854.8	140.0	150.0	9.32	1618.8	152.0	160.0	13.91	1420.1	160.0	160.0	7.15	1372.8	160.2	157.0	9.72	1205.1	158.5	160.0	2.60	47.75	72082	-91	F	15

NWO

From: Williamson, Eileen L NWO
Sent: Tuesday, June 21, 2011 2:51 PM
To: DLL-CENWD Zorinsky-Floor 3; DLL-CENWO-ALL Employees
Subject: FW: Riverwatch June 21, 2011 #2011MoRivFlood (UNCLASSIFIED)
Attachments: 621NR-RIVERWATCH6-11.pdf

Classification: UNCLASSIFIED
Caveats: NONE

-----Original Message-----

From: U.S. Army Corps of Engineers Omaha District [mailto:eileen.l.williamson@usace.army.mil]
Sent: Tuesday, June 21, 2011 2:50 PM
To: Williamson, Eileen L NWO
Subject: Riverwatch June 21, 2011 #2011MoRivFlood

Missouri River Mainstem Reservoir Bulletin (Updated 21 Jun; 1400 CDT)

Fort Peck (In operation since 1940)
Midnight Elevation
* 2251.9 ft msl
* 24-hr Change (-0.1 ft)

Daily Avg. Inflow
* 50,000 cfs (20 Jun)
* 51,000 cfs (19 Jun)

Daily Avg. Release
* 61,800 cfs (20 Jun)
* 65,500 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)
* 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)
* 2246 ft msl - 2250 ft msl

Top of Spillway Gates (closed)
* 2250 ft msl

Planned Scheduled Releases (Subject to Change)
* Releases have been decreased to 60,000 cfs.
* Reservoir will use several feet of surcharge storage above the exclusive flood control zone as spillway gates are raised.

Record Pool Elevation (Year)
* 2251.6 msl (1975)

Record Flow (Year)
* 35,000 cfs (1975)

Projected Record Flow (Date)
* 65,000 cfs (Mid June)

Garrison (In operation since 1955)

Midnight Elevation

- * 1854.2 ft msl
- * 24-hr Change (+0.2 ft)

Daily Avg. Inflow

- * 188,000 cfs (20 Jun)
- * 165,000 cfs (19 Jun)

Daily Avg. Release

- * 150,200 cfs (20 Jun)
- * 150,200 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1850 ft msl - 1854 ft msl

Top of Spillway Gates(closed)

- * 1854 ft msl

River Stage (Bismarck)

- * 18.85 (0815 CDT 21 Jun)
- * Flood stage - 16 ft
- * 18.81 (0715 CDT 20 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 150,000 cfs.
- * Reservoir is currently using surcharge storage above the exclusive flood control zone.
- * Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

- * 1854.8 msl (1975)

Record Flow (Year)

- * 65,000 cfs (1975)

Projected Record Flow (Date)

- * 150,000 cfs (Mid June)

Oahe (In operation since 1962)

Midnight Elevation

- * 1618.9 ft msl
- * 24-hr Change (+0.3 ft)

Daily Avg. Inflow

- * 201,000 cfs (20 Jun)
- * 153,000 cfs (19 Jun)

Daily Avg. Release

- * 160,300 cfs (20 Jun)
- * 158,700 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1617 ft msl - 1620 ft msl

Top of Spillway Gates (closed)

- * 1620 ft msl

River Stage (Pierre)

- * 19.81 (0730 CDT 21 Jun)
- * Flood stage - 15 ft
- * 19.33 (0730 CDT 20 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 160,000 cfs.
- * Reservoir is currently in the exclusive flood control zone.
- * Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet.

Record Pool Elevation (Year)

- * 1618.7 msl (1995)

Record Flow (Year)

- * 59,000 cfs (1997)

Projected Record Flow (Date)

- * 160,000 cfs (Mid June)

Big Bend (In operation since 1964)

Midnight Elevation

- * 1419.9 ft msl
- * 24-hr Change (+0.5 ft)

Daily Avg. Inflow

- * 172,000 cfs (20 Jun)
- * 156,000 cfs (19 Jun)

Daily Avg. Release

- * 158,900 cfs (20 Jun)
- * 158,800 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1422 ft msl - 1423 ft msl

Top of Spillway Gates (closed)

- * 1423 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 160,000 cfs.
- * Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

- * 1422.1 msl (1991)

Record Flow (Date)

- * 74,000 cfs (1997)

Projected Record Flow (Date)

- * 160,000 cfs (Mid June)

Fort Randall (In operation since 1953)

Midnight Elevation

- * 1366.3 ft msl

- * 24-hr Change (+1.2 ft)

Daily Avg. Inflow

- * 200,000 cfs (20 Jun)

- * 171,000 cfs (19 Jun)

Daily Avg. Release

- * 143,500 cfs (20 Jun)

- * 143,600 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1365 ft msl - 1375 ft msl

Top of Spillway Gates (closed)

- * 1375 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up to 148,000 cfs by mid to late June.

- * Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

- * 1372.2 msl (1997)

Record Flow (Date)

- * 67,000 cfs (1997)

Projected Record Flow (Date)

- * 148,000 cfs (Mid to late June)

Gavins Point (In operation since 1955)

Midnight Elevation

- * 1207.5 ft msl

- * 24-hr Change (-0.1 ft)

Daily Avg. Inflow

- * 150,000 cfs (20 Jun)

- * 148,000 cfs (19 Jun)

Daily Avg. Release

- * 150,000 cfs (20 Jun)

- * 150,000 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1208 ft msl - 1210 ft msl

Top of Spillway Gates (closed)

* 1210 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

Record Pool Elevation (Year)

* 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Release and inflow figures include a + or - 1 percent variation Source of information:

<http://www.nwd-mr.usace.army.mil/rcc> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1891077x-1909853>>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 21 Jun; 1400 CDT)

24-hr forecast (Glasgow, MT)

Today: Isolated showers and t-storms after noon. Patchy fog before 9am otherwise, mostly sunny, high near 77. Calm wind becoming west northwest 6 to 9 mph. Chance of precipitation is 20%.

Tonight: Partly cloudy, low around 55. North wind 6 to 10 mph.

Wednesday: Mostly sunny, with high near 79. East wind 6 to 8 mph becoming south.

24-hr forecast (Williston, ND)

Today: Showers likely, with t-storms possible after 1pm. Mostly cloudy, high near 68. East wind around 8 mph. Chance of precipitation is 60%. New rainfall amounts between 0.1 to 0.25 inch, higher amounts possible in t-storms.

Tonight: 20% chance of showers and t-storms before 1am. Mostly cloudy, low around 55. East wind 6 to 9 mph becoming calm.

Wednesday: Partly sunny, high near 75. North wind 3 to 9 mph.

24-hr forecast (Riverdale, ND)

Today: Showers likely, mainly before 1pm. Cloudy, high near 66. North wind 9 to 11 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch possible.

Tonight: 20% chance of showers. Cloudy, low around 55. North wind 7 to 11 mph.

Wednesday: 30% chance of showers. Cloudy, high near 70. North wind 7 to 14 mph, with gusts as high as 20 mph.

24-hr forecast (Washburn, ND)

Today: Showers likely. Cloudy, high near 65. North wind 10 to 14 mph, gusts as high as 20 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible.

Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 8 to 11 mph.

Wednesday: 30% chance of showers. Cloudy, high near 69. North wind 8 to 17 mph, gusts as high as 24 mph.

24-hr forecast (Bismarck/Mandan, ND)

Today: Showers likely. Cloudy, high near 64. North wind 14 to 16 mph, with gusts as high as 23 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible.

Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 10 to 14 mph, with gusts as high as 20 mph.

Wednesday: 30% chance of showers. Cloudy, high near 70. Breezy, with a north wind 9 to 12 mph increasing to 17 to 20 mph. Winds could gust as high as 28 mph.

24-hr forecast (Pierre, SD)

Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%.

Tonight: 30% chance of showers and t-storms, mainly before 1am. Mostly cloudy, low around 54. North northwest wind 18 to 25 mph, with gusts as high as 36 mph.

Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph, with gusts as high as 30 mph.

24-hr forecast (Ft. Pierre, SD)

Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%.

Tonight: 30% chance of showers and t-storms before 1am. Mostly cloudy, low around 54. North northwest wind 17 to 25 mph, with gusts as high as 36 mph.

Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph.

24-hr forecast (Lower Brule, SD)

Today: Showers and t-storms. High near 63. North northwest wind 24 to 28 mph, with gusts as high as 38 mph. Chance of precipitation is 100%.

Tonight: 40% chance of showers and t-storms, mainly before 1am. Cloudy, low around 56. North northwest wind 20 to 26 mph, with gusts as high as 38 mph.

Wednesday: Partly sunny, high near 71. North northwest wind 18 to 24 mph, with gusts as high as 33 mph.

24-hr forecast (Chamberlain, SD)

Today: Occasional showers, t-storms possible after 10am. Some storms could produce heavy rain. High near 61. North northwest wind 21 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 100%. New rainfall amounts 0.25 to 0.5 inch possible.

Tonight: Chance of showers and t-storms, mainly before 1am. Cloudy, low around 57. North northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 40%.

Wednesday: Slight chance of showers and t-storms before 1pm. Partly sunny, high near 70. Northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 20%.

24-hr forecast (Yankton, SD)

Today: Showers likely, then showers and a possible t-storm after 10am. Some storms could produce heavy rain. High near 66. North northwest wind 10 to 13 mph increasing to 18 to 21

mph. Winds could gust as high as 30 mph. Chance of precipitation is 90%. New rainfall amounts 0.25 to 0.5 inch possible.

Tonight: Chance of showers and t-storms before and after 1am. Low around 58. Northwest wind 22 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 80%. New rainfall amounts 0.1 inch, higher amounts possible in t-storms.

Wednesday: Chance of showers and t-storms. Cloudy, high near 67. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 50%.

24-hr forecast (Sioux City, IA)

Today: Showers likely, then showers and a possible t-storm after 10am. Some storms could produce heavy rain. High near 69. Southeast wind 9 to 14 mph becoming west. Chance of precipitation is 80%. New rainfall amounts 0.25 to 0.5 inch possible.

Tonight: Showers likely and a possible t-storm. Cloudy, low around 59. West northwest wind around 17 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

Wednesday: Chance of showers and t-storms. Cloudy, high near 65. Northwest wind 16 to 22 mph, with gusts as high as 30 mph. Chance of precipitation is 50%.

24-hr forecast (Omaha, NE)

Today: Chance of showers and t-storms, then showers likely and a possible t-storm after 1pm. Cloudy, high near 73. West southwest wind 10 to 18 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in thunderstorms.

Tonight: Chance of showers, mainly before 1am. Cloudy, low around 60. West northwest wind 15 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 30%. New rainfall amounts 0.1 inch possible.

Wednesday: 30% chance of showers, mainly before 1pm. Cloudy, high near 71. Northwest wind 15 to 21 mph, with gusts as high as 30 mph. New rainfall amounts 0.1 inch possible.

Source of information: <http://www.weather.gov/> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1891076x-18832>>

Internet: <http://www.nwo.usace.army.mil> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1891075x-538916>>

Facebook: <http://www.facebook.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1891074x-1059000>>

Twitter: <http://www.twitter.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1891073x-1579084>>

YouTube: <http://www.youtube.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1891072x-2099168>>

Flickr: <http://www.flickr.com/photos/omahausace> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1891071x-208153>>

<<http://us.vocuspr.com/Url.aspx?520028x1891078x-1389770>>

If you would rather not receive future communications from U.S. Army Corps of Engineers Omaha District, let us know by clicking here. <<http://USACEARMY.pr-optout.com/OptOut.aspx?520028x24691x318270x3x1874483x24000x6&Email=eileen.l.williamson%40usace.army.mil>>

U.S. Army Corps of Engineers Omaha District, 1616 Capitol Ave, Omaha, NE 68102 United States



US Army Corps
of Engineers
Corvallis District

Missouri River Mainstem Reservoir Bulletin (Updated 21 Jun; 1400 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation <ul style="list-style-type: none"> 2251.9 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 50,000 cfs (20 Jun) 51,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none"> 61,800 cfs (20 Jun) 65,500 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 2246 ft msl – 2250 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none"> 2250 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been decreased to 60,000 cfs. Reservoir will use several feet of surcharge storage above the exclusive flood control zone as spillway gates are raised. Record Pool Elevation (Year) <ul style="list-style-type: none"> 2251.6 msl (1975) Record Flow (Year) <ul style="list-style-type: none"> 35,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none"> 65,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1854.2 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 188,000 cfs (20 Jun) 165,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none"> 150,200 cfs (20 Jun) 150,200 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1850 ft msl – 1854 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none"> 1854 ft msl River Stage (Bismarck) <ul style="list-style-type: none"> 18.85 (0815 CDT 21 Jun) Flood stage – 16 ft 18.81 (0715 CDT 20 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 150,000 cfs. Reservoir is currently using surcharge storage above the exclusive flood control zone. Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1854.8 msl (1975) Record Flow (Year) <ul style="list-style-type: none"> 65,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none"> 150,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1618.9 ft msl 24-hr Change (+0.3 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 201,000 cfs (20 Jun) 153,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none"> 160,300 cfs (20 Jun) 158,700 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1617 ft msl – 1620 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none"> 1620 ft msl River Stage (Pierre) <ul style="list-style-type: none"> 19.81 (0730 CDT 21 Jun) Flood stage – 15 ft 19.33 (0730 CDT 20 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 160,000 cfs. Reservoir is currently in the exclusive flood control zone. Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1618.7 msl (1995) Record Flow (Year) <ul style="list-style-type: none"> 59,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 160,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1419.9 ft msl 24-hr Change (+0.5 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 172,000 cfs (20 Jun) 156,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none"> 158,900 cfs (20 Jun) 158,800 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1422 ft msl – 1423 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none"> 1423 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 160,000 cfs. Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1422.1 msl (1991) Record Flow (Date) <ul style="list-style-type: none"> 74,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 160,000 cfs (Mid June) 	Midnight Elevation <ul style="list-style-type: none"> 1366.3 ft msl 24-hr Change (+1.2 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 200,000 cfs (20 Jun) 171,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none"> 143,500 cfs (20 Jun) 143,600 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1365 ft msl – 1375 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none"> 1375 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases will be stepped up to 148,000 cfs by mid to late June. Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1372.2 msl (1997) Record Flow (Date) <ul style="list-style-type: none"> 67,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 148,000 cfs (Mid to late June) 	Midnight Elevation <ul style="list-style-type: none"> 1207.5 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none"> 150,000 cfs (20 Jun) 148,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none"> 150,000 cfs (20 Jun) 150,000 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none"> 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none"> 1208 ft msl – 1210 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none"> 1210 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none"> Releases have been stepped up to 150,000 cfs. Record Pool Elevation (Year) <ul style="list-style-type: none"> 1209.7 msl (2010) Record Flow (Date) <ul style="list-style-type: none"> 70,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none"> 150,000 cfs (Mid June)

Release and inflow figures include a + or - 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 21 Jun; 1400 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
<p>24-hr forecast (Glasgow, MT) Today: Isolated showers and t-storms after noon. Patchy fog before 9am otherwise, mostly sunny, high near 77. Calm wind becoming west northwest 6 to 9 mph. Chance of precipitation is 20%.</p> <p>Tonight: Partly cloudy, low around 55. North wind 6 to 10 mph.</p> <p>Wednesday: Mostly sunny, with high near 79. East wind 6 to 8 mph becoming south.</p> <p>24-hr forecast (Williston, ND) Today: Showers likely, with t-storms possible after 1pm. Mostly cloudy, high near 68. East wind around 8 mph. Chance of precipitation is 60%. New rainfall amounts between 0.1 to 0.5 inch, higher amounts possible in t-storms.</p> <p>Tonight: 20% chance of showers and t-storms before 1am. Mostly cloudy, low around 55. East wind 6 to 9 mph becoming calm.</p> <p>Wednesday: Partly sunny, high near 75. North wind 3 to 9 mph.</p>	<p>24-hr forecast (Riverdale, ND) Today: Showers likely, mainly before 1pm. Cloudy, high near 66. North wind 9 to 11 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch possible.</p> <p>Tonight: 20% chance of showers. Cloudy, low around 55. North wind 7 to 11 mph.</p> <p>Wednesday: 30% chance of showers. Cloudy, high near 70. North wind 7 to 14 mph, with gusts as high as 20 mph.</p> <p>24-hr forecast (Washburn, ND) Today: Showers likely. Cloudy, high near 65. North wind 10 to 14 mph, gusts as high as 20 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible.</p> <p>Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 8 to 11 mph.</p> <p>Wednesday: 30% chance of showers. Cloudy, high near 69. North wind 8 to 17 mph, gusts as high as 24 mph.</p>	<p>24-hr forecast (Pierre, SD) Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%.</p> <p>Tonight: 30% chance of showers and t-storms, mainly before 1am. Mostly cloudy, low around 54. North northwest wind 18 to 25 mph, with gusts as high as 36 mph.</p> <p>Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph, with gusts as high as 30 mph.</p> <p>24-hr forecast (Ft. Pierre, SD) Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%.</p> <p>Tonight: 30% chance of showers and t-storms before 1am. Mostly cloudy, low around 54. North northwest wind 17 to 25 mph, with gusts as high as 36 mph.</p> <p>Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph.</p>	<p>24-hr forecast (Lower Brule, SD) Today: Showers and t-storms. High near 63. North northwest wind 24 to 28 mph, with gusts as high as 38 mph. Chance of precipitation is 100%.</p> <p>Tonight: 40% chance of showers and t-storms, mainly before 1am. Cloudy, low around 56. North northwest wind 20 to 26 mph, with gusts as high as 38 mph.</p> <p>Wednesday: Partly sunny, high near 71. North northwest wind 18 to 24 mph, with gusts as high as 33 mph.</p>	<p>24-hr forecast (Chamberlain, SD) Today: Occasional showers, t-storms possible after 10am. Some storms could produce heavy rain. High near 61. North northwest wind 21 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 100%. New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tonight: Chance of showers and t-storms, mainly before 1am. Cloudy, low around 57. North northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 40%.</p> <p>Wednesday: Slight chance of showers and t-storms before 1pm. Partly sunny, high near 70. North northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 20%.</p>	<p>24-hr forecast (Yankton, SD) Today: Showers likely, then showers and a possible t-storm after 10am. Some storms could produce heavy rain. High near 66. North northwest wind 10 to 13 mph increasing to 18 to 21 mph. Winds could gust as high as 30 mph. Chance of precipitation is 90%. New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tonight: Chance of showers and t-storms before and after 1am. Low around 58. Northwest wind 22 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 80%. New rainfall amounts 0.1 inch, higher amounts possible in t-storms.</p> <p>Wednesday: Chance of showers and t-storms. Cloudy, high near 67. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 50%.</p> <p>24-hr forecast (Sioux City, IA) Today: Showers likely, then showers and a possible t-storm after 10am. Some storms could produce heavy rain. High near 69. Southeast wind 9 to 14 mph becoming west. Chance of precipitation is 80%. New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tonight: Showers likely and a possible t-storm. Cloudy, low around 59. West northwest wind around 17 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.</p>

Source of information: <http://www.weather.gov>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 21 Jun; 1400 CDT)

Fort Peck	Garrison	Osage	Big Bend	Fort Randall	Gavins Point
	<p>24-hr forecast (Bismarck/Mandan, ND) Today: Showers likely. Cloudy, high near 64. North wind 14 to 16 mph, with gusts as high as 23 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible.</p> <p>Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 10 to 14 mph, with gusts as high as 20 mph.</p> <p>Wednesday: 30% chance of showers. Cloudy, high near 70. Breezy, with a north wind 9 to 12 mph increasing to 17 to 20 mph. Winds could gust as high as 28 mph.</p>				<p>Wednesday: Chance of showers and t-storms. Cloudy, high near 65. Northwest wind 16 to 22 mph, with gusts as high as 30 mph. Chance of precipitation is 50%.</p> <p>24-hr forecast (Omaha, NE) Today: Chance of showers and t-storms, then showers likely and a possible t-storm after 1pm. Cloudy, high near 73. West southwest wind 10 to 18 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in thunderstorms.</p> <p>Tonight: Chance of showers, mainly before 1am. Cloudy, low around 60. West northwest wind 15 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 30%. New rainfall amounts 0.1 inch possible.</p> <p>Wednesday: 30% chance of showers, mainly before 1pm. Cloudy, high near 71. Northwest wind 15 to 21 mph, with gusts as high as 30 mph. New rainfall amounts 0.1 inch possible.</p>

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

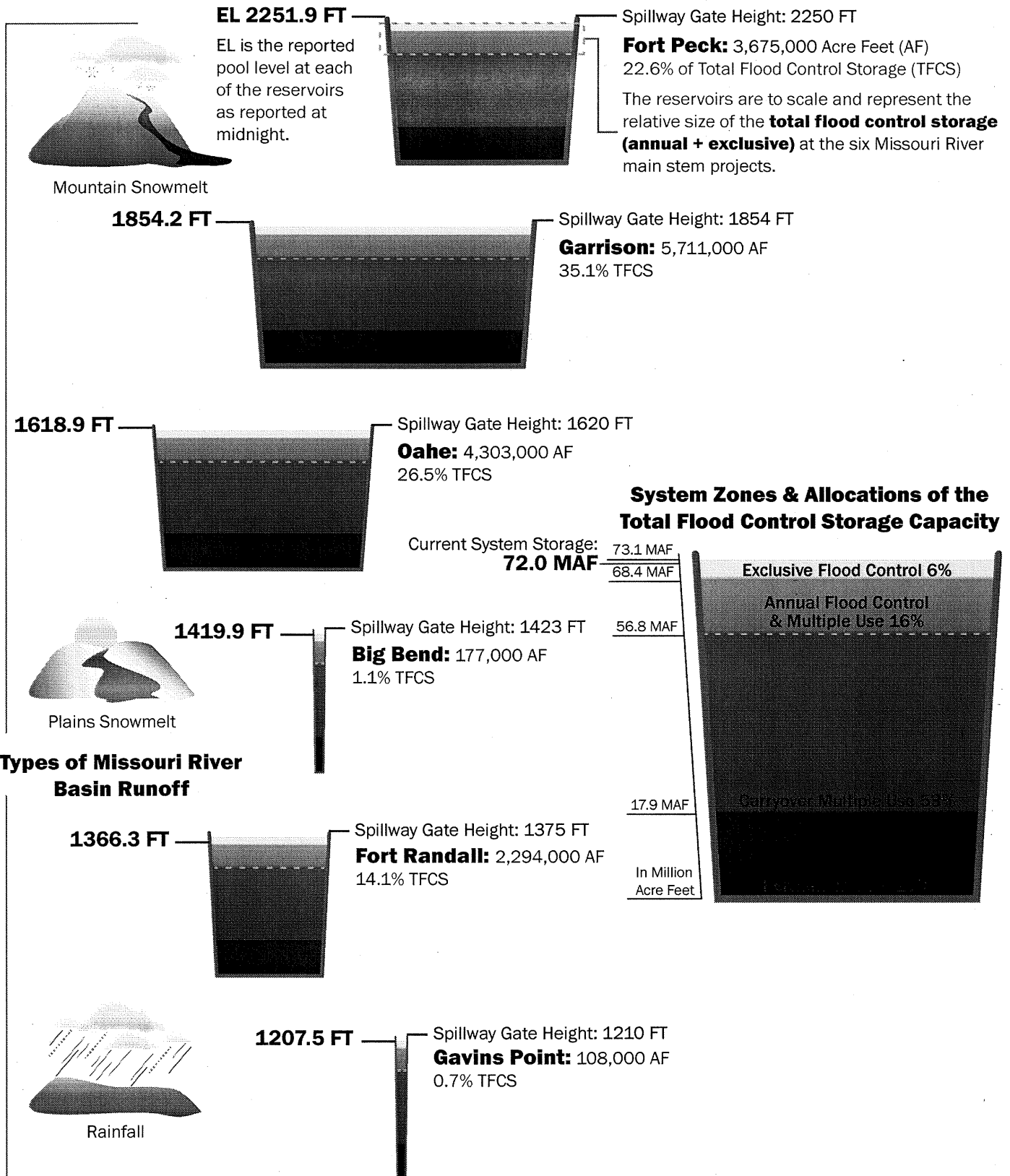
Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Main Stem Reservoir System

Midnight Elevation (EL) Forecast: June 21, 2011 (feet above mean sea level)



NWO

From: julie.meyer.gov@ls1-krf.krf.noaa.gov
Sent: Tuesday, June 21, 2011 2:35 PM
To: Farhat, Jody S NWD02
Subject: Upper Dakota Tribs Forecast

ZCZC MKCRVFUDT DEF
TTAA00 KKRK DDHMM
RVFUDT

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1928Z TUE JUN 21 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS UPPER DAKOTA TRIBS

: ==> This forecast includes obsd precip & 24 hours of QPF <==

: ***** AFTERNOON UPDATE *****

RIVER/STATION	FS	TDY	F O R E C A S T
LITTLE MUDDY CREEK			
WILLISTON ND 10NE	10.0	8.3	CREST NEAR 9.8 FT 06/22 AM

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:
:
:WILLISTON ND 10NE - LITTLE MUDDY CREEK HSA - BIS
:FLOOD STAGE 10.0 FCST ISSUANCE STAGE 8.0

:
:LATEST STAGE 8.3 FT AT 1815Z ON 0621

.AR : CREST : LMCN8 20110622 Z DC201106211928/DH12/HGIFFX 9.8

.ER LMCN8 20110621 Z DC201106211928/DH18/HGIFFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0621: / 8.4/ 8.5/ 9.7

.E2 :0622:/ 9.8/ 9.7/ 9.4/ 9.1

.E3 :0623:/ 8.8/ 8.4/ 8.1/ 7.7

.E4 :0624:/ 7.4/ 7.1/ 6.9/ 6.6

.E5 :0625:/ 6.4/ 6.2/ 6.1/ 6.0

.E6 :0626:/ 5.8

:*****

:COMMENT

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:raw

:...END of MESSAGE...

NWO

From: MRJIC
Sent: Tuesday, June 21, 2011 2:33 PM
Subject: Missouri River Joint Information Center Call 5 p.m. (CDT) ***Original Number Still Being Used***

ORIGINAL CALL NUMBER STILL BEING USED

Reminder: The daily call will occur at 1700hrs/CT. Call in information is as follows:

Access Code: [REDACTED]
Security Code: [REDACTED]

This call is intended for Congressional Delegation, Tribes, State Government, Local Government, and Press. Please do not distribute the number to the general public, the JIC is set up with email and call in accessibility to answer questions for the general public.

General format includes updates from the Hydrometeorological Center (HPC), Iowa Department of Transportation, Missouri Department of Transportation, Nebraska Department of Transportation, the Missouri River Basin Water Management Division, USACE Omaha District Emergency Operations Center, USACE Kansas City District Emergency Operations, followed by a Questions and Answer opportunity.

To listen to the previous recordings, please visit our website.
<http://www.nwo.usace.army.mil/html/op-e/flood2011/pressconf_arch.html>

For bios of USACE staff on 5 p.m. call, please visit our website.
<[http://www.nwo.usace.army.mil/html/op-e/flood2011/Flood Press Packet Jun 2011 QR.pdf](http://www.nwo.usace.army.mil/html/op-e/flood2011/Flood_Press_Packet_Jun_2011_QR.pdf)>

Thank you.

MRJIC

[REDACTED] NWO

From: Monty_Gartin@cargill.com
Sent: Tuesday, June 21, 2011 2:20 PM
To: Farhat, Jody S NWD02
Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Thanks Jody!

Looking forward to speaking with you.

Monty

-----Original Message-----

From: Jody.S.Farhat@usace.army.mil [mailto:Jody.S.Farhat@usace.army.mil]

Sent: Tuesday, June 21, 2011 11:37 AM

To: Gartin, Monty - Monty_Gartin@cargill.com

Cc: [REDACTED]@usace.army.mil

Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Monty, [REDACTED] and I will be available at that time. We'll dial in on the conference line you provided below.

Thanks,
Jody

-----Original Message-----

From: Monty_Gartin@cargill.com [mailto:Monty_Gartin@cargill.com]

Sent: Tuesday, June 21, 2011 10:00 AM

To: Farhat, Jody S NWD02

Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Jody,

Thanks for your quick response and we appreciate your willingness to talk with us. With the current release schedule from Gavin's Point at 150,000 kfs we are maintaining our operations. Our discussion will focus on the triggers that could lead to an increase from Gavin's Point.

Would you be available for a :20 minute discussion with our leadership team on Thursday June 23rd, at 10:00am central time (Dial 866-318-5174 Code# 5052660998). The call would include our campus partners and leaders from the following companies on our site in Blair Nebraska:

* Cargill Inc.

- * Evonik Inc.
- * Purac Inc.
- * Novozymes Inc.
- * Natureworks LLC.

We know how busy you are and appreciate your time and the dedication of the entire Army Corp team to minimizing the impact to our community and customers.

Regards,

Monty G. Gartin

Build, operate, and maintain RIGHT to become the partner of choice.

Monty Gartin | Health, Safety & Security Team Leader | Cargill Corn Milling 650 Industrial Park Drive | Blair, NE 68008 | 402-533-1381 | Cell 402-306-3709 | monty_gartin@cargill.com

cid:609003111@05022009-1FD7 Caring Leadership > Systems Excellence > Injury Free Lifestyle

-----Original Message-----

From: Jody.S.Farhat@usace.army.mil [mailto:Jody.S.Farhat@usace.army.mil]
Sent: Thursday, June 16, 2011 1:34 PM
To: Gartin, Monty - Monty_Gartin@cargill.com
Cc: [REDACTED]@usace.army.mil; [REDACTED]@usace.army.mil;
[REDACTED]@usace.army.mil
Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Monty,

We would be happy to discuss the planned releases with you. As you might expect, we are very busy with the ongoing flood event, so we would prefer setting up a conference call, or if you prefer a face-to-face meeting it would be preferable if you came to our office.

Regards,

Jody Farhat, P.E.

Chief, Missouri River Basin Water Management

jody.s.farhat@usace.army.mil

Office: 402-996-3840

-----Original Message-----

From: Monty_Gartin@cargill.com [mailto:Monty_Gartin@cargill.com]

Sent: Wednesday, June 15, 2011 4:43 PM

To: Management, Missouri Water NWD02

Subject: Cargill Inc - Blair Nebraska

To Jody Farhat and/or Staff,

We are Cargill Corn Milling in Blair Nebraska, our site is a bio-refinery which includes 6 joint ventures and has an assets value over 2

billion dollars. We have been working with the Army Corps of Engineers from the Omaha District daily. Our relationship with the Corps of engineers has been very positive and we look forward to more interactions.

We recently met with Randall Behm to help us understand the potential impact of the current release to our site. This meeting helped us to better understand the science and the protocols used to manage the current situation on the Missouri river. Randall discussed with us his role and his understanding of the Corps future release plans.

We know how busy you are, but we would also like to meet with you or a senior member of your staff to better understand future plans and release scenarios. We have created a 3.5 mile berm around our site, but are still very concerned with the economic impact to our customers and the state of Nebraska if we shutdown.

We would like to invite you to our campus for a formal review and discussion on our mutual goals around the safety and well being of our site and community. We look forward to working with the Army Corps of Engineers in a positive and proactive manor. If coming to Blair is not feasible, we are very willing to come to you.

Thank you on behalf of our employees and community,

Monty G. Gartin

Build, operate, and maintain RIGHT to become the partner of
choice.

Monty Gartin | Health, Safety & Security Team Leader |Cargill Corn Milling
650 Industrial Park Drive | Blair, NE 68008 | 402-533-1381 | Cell
402-306-3709 | monty_gartin@cargill.com

cid:609003111@05022009-1FD7 Caring Leadership > Systems Excellence > Injury
Free Lifestyle

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 2:13 PM
To: CENWO-EOC NWO; Bertino, John J Jr NWO; [REDACTED]
NWO; 'bruce.sullivan@noaa.gov'; 'bruce.terry@noaa.gov';
[REDACTED] NWO; [REDACTED] NWO; DLL-CENW
[REDACTED] NWO; Farhat, Jody S NWD02; Farmer, Monique L
[REDACTED] NWO; [REDACTED] NWK; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; [REDACTED]
HQ@ NWO; [REDACTED] NWK; [REDACTED] NW
[REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO
[REDACTED] NWO; [REDACTED] NWO; [REDACTED]
'michael.eckert@noaa.gov'; [REDACTED] NWO;
[REDACTED] NWO; 'robert.kelly@noaa.gov'; Ruch, Robert J COL NW
[REDACTED] NWO; Tipton, Robert A Col NWD; [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; Williamson, Eilee
NWD; Blechinger, Erik T NWO; [REDACTED] NWK; [REDACTED]
SPK; [REDACTED] SWG; [REDACTED] NWO; Ol
[REDACTED] SWL; [REDACTED] NWO; [REDACTED]
NWO
Subject: Riverwatch Daily Update June 21, 2011 (UNCLASSIFIED)
Attachments: Flood_Fight_Storyboard_21JUN.docx

Missouri River Mainstem Reservoir Bulletin (Updated 21 Jun; 1400 CDT)

Daily Avg. Inflow
* 50,000 cfs (20 Jun)
* 51,000 cfs (19 Jun)

Daily Avg. Release
* 61,800 cfs (20 Jun)
* 65,500 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)
* 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)
* 2246 ft msl - 2250 ft msl

Top of Spillway Gates (closed)
* 2250 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been decreased to 60,000 cfs.
- * Reservoir will use several feet of surcharge storage above the exclusive flood control zone as spillway gates are raised.

Record Pool Elevation (Year)

* 2251.6 msl (1975)

Record Flow (Year)

* 35,000 cfs (1975)

Projected Record Flow (Date)

* 65,000 cfs (Mid June)

Garrison (In operation since 1955)

Midnight Elevation

* 1854.2 ft msl

* 24-hr Change (+0.2 ft)

Daily Avg. Inflow

* 188,000 cfs (20 Jun)

* 165,000 cfs (19 Jun)

Daily Avg. Release

* 150,200 cfs (20 Jun)

* 150,200 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1850 ft msl - 1854 ft msl

Top of Spillway Gates(closed)

* 1854 ft msl

River Stage (Bismarck)

* 18.85 (0815 CDT 21 Jun)

* Flood stage - 16 ft

* 18.81 (0715 CDT 20 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

* Reservoir is currently using surcharge storage above the exclusive flood control zone.

* Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

* 1854.8 msl (1975)

Record Flow (Year)

* 65,000 cfs (1975)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Oahe (In operation since 1962)

Midnight Elevation

* 1618.9 ft msl

* 24-hr Change (+0.3 ft)

Daily Avg. Inflow

* 201,000 cfs (20 Jun)

* 153,000 cfs (19 Jun)

Daily Avg. Release

- * 160,300 cfs (20 Jun)
- * 158,700 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1617 ft msl - 1620 ft msl

Top of Spillway Gates (closed)

- * 1620 ft msl

River Stage (Pierre)

- * 19.81 (0730 CDT 21 Jun)
- * Flood stage - 15 ft
- * 19.33 (0730 CDT 20 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 160,000 cfs.
- * Reservoir is currently in the exclusive flood control zone.
- * Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet.

Record Pool Elevation (Year)

- * 1618.7 msl (1995)

Record Flow (Year)

- * 59,000 cfs (1997)

Projected Record Flow (Date)

- * 160,000 cfs (Mid June)

Big Bend (In operation since 1964)

Midnight Elevation

- * 1419.9 ft msl
- * 24-hr Change (+0.5 ft)

Daily Avg. Inflow

- * 172,000 cfs (20 Jun)
- * 156,000 cfs (19 Jun)

Daily Avg. Release

- * 158,900 cfs (20 Jun)
- * 158,800 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1422 ft msl - 1423 ft msl

Top of Spillway Gates (closed)

- * 1423 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 160,000 cfs.

* Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

* 1422.1 msl (1991)

Record Flow (Date)

* 74,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Mid June)

Fort Randall (In operation since 1953)

Midnight Elevation

* 1366.3 ft msl

* 24-hr Change (+1.2 ft)

Daily Avg. Inflow

* 200,000 cfs (20 Jun)

* 171,000 cfs (19 Jun)

Daily Avg. Release

* 143,500 cfs (20 Jun)

* 143,600 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1365 ft msl - 1375 ft msl

Top of Spillway Gates (closed)

* 1375 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 148,000 cfs by mid to late June.

* Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

* 1372.2 msl (1997)

Record Flow (Date)

* 67,000 cfs (1997)

Projected Record Flow (Date)

* 148,000 cfs (Mid to late June)

Gavins Point (In operation since 1955)

Midnight Elevation

* 1207.5 ft msl

* 24-hr Change (-0.1 ft)

Daily Avg. Inflow

* 150,000 cfs (20 Jun)

* 148,000 cfs (19 Jun)

Daily Avg. Release

* 150,000 cfs (20 Jun)

* 150,000 cfs (19 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1208 ft msl - 1210 ft msl

Top of Spillway Gates (closed)

* 1210 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

Record Pool Elevation (Year)

* 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Release and inflow figures include a + or - 1 percent variation

Source of information: <http://www.nwd-mr.usace.army.mil/rcc>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 21 Jun; 1400 CDT)

24-hr forecast (Glasgow, MT)

Today: Isolated showers and t-storms after noon. Patchy fog before 9am otherwise, mostly sunny, high near 77. Calm wind becoming west northwest 6 to 9 mph. Chance of precipitation is 20%.

Tonight: Partly cloudy, low around 55. North wind 6 to 10 mph.

Wednesday: Mostly sunny, with high near 79. East wind 6 to 8 mph becoming south.

24-hr forecast (Williston, ND)

Today: Showers likely, with t-storms possible after 1pm. Mostly cloudy, high near 68. East wind around 8 mph. Chance of precipitation is 60%. New rainfall amounts between 0.1 to 0.25 inch, higher amounts possible in t-storms.

Tonight: 20% chance of showers and t-storms before 1am. Mostly cloudy, low around 55. East wind 6 to 9 mph becoming calm.

Wednesday: Partly sunny, high near 75. North wind 3 to 9 mph.

24-hr forecast (Riverdale, ND)

Today: Showers likely, mainly before 1pm. Cloudy, high near 66. North wind 9 to 11 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch possible.

Tonight: 20% chance of showers. Cloudy, low around 55. North wind 7 to 11 mph.

Wednesday: 30% chance of showers. Cloudy, high near 70. North wind 7 to 14 mph, with gusts as high as 20 mph.

24-hr forecast (Washburn, ND)

Today: Showers likely. Cloudy, high near 65. North wind 10 to 14 mph, gusts as high as 20 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible.

Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 8 to 11 mph.

Wednesday: 30% chance of showers. Cloudy, high near 69. North wind 8 to 17 mph, gusts as high as 24 mph.

24-hr forecast (Bismarck/Mandan, ND)

Today: Showers likely. Cloudy, high near 64. North wind 14 to 16 mph, with gusts as high as 23 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible.

Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 10 to 14 mph, with gusts as high as 20 mph.

Wednesday: 30% chance of showers. Cloudy, high near 70. Breezy, with a north wind 9 to 12 mph increasing to 17 to 20 mph. Winds could gust as high as 28 mph.

24-hr forecast (Pierre, SD)

Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%.

Tonight: 30% chance of showers and t-storms, mainly before 1am. Mostly cloudy, low around 54. North northwest wind 18 to 25 mph, with gusts as high as 36 mph.

Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph, with gusts as high as 30 mph.

24-hr forecast (Ft. Pierre, SD)

Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%.

Tonight: 30% chance of showers and t-storms before 1am. Mostly cloudy, low around 54. North northwest wind 17 to 25 mph, with gusts as high as 36 mph.

Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph.

24-hr forecast (Lower Brule, SD)

Today: Showers and t-storms. High near 63. North northwest wind 24 to 28 mph, with gusts as high as 38 mph. Chance of precipitation is 100%.

Tonight: 40% chance of showers and t-storms, mainly before 1am. Cloudy, low around 56. North northwest wind 20 to 26 mph, with gusts as high as 38 mph.

Wednesday: Partly sunny, high near 71. North northwest wind 18 to 24 mph, with gusts as high as 33 mph.

24-hr forecast (Chamberlain, SD)

Today: Occasional showers, t-storms possible after 10am. Some storms could produce heavy rain. High near 61. North northwest wind 21 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 100%. New rainfall amounts 0.25 to 0.5 inch possible.

Tonight: Chance of showers and t-storms, mainly before 1am. Cloudy, low around 57. North northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 40%.

Wednesday: Slight chance of showers and t-storms before 1pm. Partly sunny, high near 70. Northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 20%.

24-hr forecast (Yankton, SD)

Today: Showers likely, then showers and a possible t-storm after 10am. Some storms could produce heavy rain. High near 66. North northwest wind 10 to 13 mph increasing to 18 to 21 mph. Winds could gust as high as 30 mph. Chance of precipitation is 90%. New rainfall amounts 0.25 to 0.5 inch possible.

Tonight: Chance of showers and t-storms before and after 1am. Low around 58. Northwest wind 22 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 80%. New rainfall amounts 0.1 inch, higher amounts possible in t-storms.

Wednesday: Chance of showers and t-storms. Cloudy, high near 67. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 50%.

24-hr forecast (Sioux City, IA)

Today: Showers likely, then showers and a possible t-storm after 10am. Some storms could produce heavy rain. High near 69. Southeast wind 9 to 14 mph becoming west. Chance of precipitation is 80%. New rainfall amounts 0.25 to 0.5 inch possible.

Tonight: Showers likely and a possible t-storm. Cloudy, low around 59. West northwest wind around 17 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

Wednesday: Chance of showers and t-storms. Cloudy, high near 65. Northwest wind 16 to 22 mph, with gusts as high as 30 mph. Chance of precipitation is 50%.

24-hr forecast (Omaha, NE)

Today: Chance of showers and t-storms, then showers likely and a possible t-storm after 1pm. Cloudy, high near 73. West southwest wind 10 to 18 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in thunderstorms.

Tonight: Chance of showers, mainly before 1am. Cloudy, low around 60. West northwest wind 15 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 30%. New rainfall amounts 0.1 inch possible.

Wednesday: 30% chance of showers, mainly before 1pm. Cloudy, high near 71. Northwest wind 15 to 21 mph, with gusts as high as 30 mph. New rainfall amounts 0.1 inch possible.

Source of information: <http://www.weather.gov/>
Internet: <http://www.nwo.usace.army.mil>
Facebook: <http://www.facebook.com/OmahaUSACE>
Twitter: <http://www.twitter.com/OmahaUSACE>
YouTube: <http://www.youtube.com/OmahaUSACE>
Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Flooding (Logistics) (Updated 21 Jun; 1400 CDT)

Personnel Deployed

7 (Glasgow, MT)
1 (Garrison, ND)
4 (Bismarck, ND)
1 (Fort Yates, ND)
6 (Williston, ND)
5 (Pierre, SD)

1 (Kansas City, MO)
3 (Sioux City, IA)
1 (S. Sioux City, NE)
1 (Onawa, IA)
16 (Missouri River Survey - 7 teams)
1 (Lincoln, NE)
1 (Offutt, NE)
5 (Hamburg, IA)

Equipment Deployed
HESCO (3' and 4')
Issued: 74,270 LF
On Hand: 30,950 LF
Projected Outstanding Requirements: 35,000 LF

Sandbags
Issued: 14,637,000
On Hand: 6,923,500
Projected Outstanding Requirements: 6.5 M

Poly Rolls
Issued: 2,836 rolls
On Hand: 1,987 rolls
Projected Outstanding Requirements: 1,500 rolls

Pumps
Issued: 48 pumps
On Hand: 5 pumps (4 - serviceable)
Projected Outstanding Requirements: 20 pumps

Slingbags
On Hand: 1,225 slingbags (2K lbs each)

Heavybags
On Hand: 6,420 heavybags (35x35x35 each)

Geotextile
On Hand: 4 rolls (16' x 500')

Additional Supplies due in:
1 pump waiting on PTO shaft
HESCO: 4,750 LF

Source of information: CMT Brief (20 Jun 11)

Classification: UNCLASSIFIED
Caveats: NONE



Missouri River Mainstem Reservoir Bulletin (Updated 21 Jun; 1400 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation <ul style="list-style-type: none">2251.9 ft msl24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none">50,000 cfs (20 Jun)51,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none">61,800 cfs (20 Jun)65,500 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">2246 ft msl – 2250 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none">2250 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases have been decreased to 60,000 cfs.Reservoir will use several feet of surcharge storage above the exclusive flood control zone as spillway gates are raised. Record Pool Elevation (Year) <ul style="list-style-type: none">2251.6 msl (1975) Record Flow (Year) <ul style="list-style-type: none">35,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none">65,000 cfs (Mid June)	Midnight Elevation <ul style="list-style-type: none">1854.2 ft msl24-hr Change (+0.2 ft) Daily Avg. Inflow <ul style="list-style-type: none">188,000 cfs (20 Jun)165,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none">150,200 cfs (20 Jun)150,200 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1850 ft msl – 1854 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none">1854 ft msl River Stage (Bismarck) <ul style="list-style-type: none">18.85 (0815 CDT 21 Jun)Flood stage – 16 ft18.81 (0715 CDT 20 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases have been stepped up to 150,000 cfs.Reservoir is currently using surcharge storage above the exclusive flood control zone.Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) <ul style="list-style-type: none">1854.8 msl (1975) Record Flow (Year) <ul style="list-style-type: none">65,000 cfs (1975) Projected Record Flow (Date) <ul style="list-style-type: none">150,000 cfs (Mid June)	Midnight Elevation <ul style="list-style-type: none">1618.9 ft msl24-hr Change (+0.3 ft) Daily Avg. Inflow <ul style="list-style-type: none">201,000 cfs (20 Jun)153,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none">160,300 cfs (20 Jun)158,700 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1617 ft msl – 1620 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none">1620 ft msl River Stage (Pierre) <ul style="list-style-type: none">19.81 (0730 CDT 21 Jun)Flood stage – 15 ft19.33 (0730 CDT 20 Jun) Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases have been stepped up to 160,000 cfs.Reservoir is currently in the exclusive flood control zone.Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet. Record Pool Elevation (Year) <ul style="list-style-type: none">1618.7 msl (1995) Record Flow (Year) <ul style="list-style-type: none">59,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none">160,000 cfs (Mid June)	Midnight Elevation <ul style="list-style-type: none">1419.9 ft msl24-hr Change (+0.5 ft) Daily Avg. Inflow <ul style="list-style-type: none">172,000 cfs (20 Jun)156,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none">158,900 cfs (20 Jun)158,800 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1422 ft msl – 1423 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none">1423 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases have been stepped up to 160,000 cfs.Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) <ul style="list-style-type: none">1422.1 msl (1991) Record Flow (Date) <ul style="list-style-type: none">74,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none">160,000 cfs (Mid June)	Midnight Elevation <ul style="list-style-type: none">1366.3 ft msl24-hr Change (+1.2 ft) Daily Avg. Inflow <ul style="list-style-type: none">200,000 cfs (20 Jun)171,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none">143,500 cfs (20 Jun)143,600 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1365 ft msl – 1375 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none">1375 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases will be stepped up to 148,000 cfs by mid to late June.Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) <ul style="list-style-type: none">1372.2 msl (1997) Record Flow (Date) <ul style="list-style-type: none">67,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none">148,000 cfs (Mid to late June)	Midnight Elevation <ul style="list-style-type: none">1207.5 ft msl24-hr Change (-0.1 ft) Daily Avg. Inflow <ul style="list-style-type: none">150,000 cfs (20 Jun)148,000 cfs (19 Jun) Daily Avg. Release <ul style="list-style-type: none">150,000 cfs (20 Jun)150,000 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) <ul style="list-style-type: none">1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) <ul style="list-style-type: none">1208 ft msl – 1210 ft msl Top of Spillway Gates (closed) <ul style="list-style-type: none">1210 ft msl Planned Scheduled Releases (Subject to Change) <ul style="list-style-type: none">Releases have been stepped up to 150,000 cfs. Record Pool Elevation (Year) <ul style="list-style-type: none">1209.7 msl (2010) Record Flow (Date) <ul style="list-style-type: none">70,000 cfs (1997) Projected Record Flow (Date) <ul style="list-style-type: none">150,000 cfs (Mid June)

Release and inflow figures include a + or - 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 21 Jun; 1400 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
<p>24-hr forecast (Glasgow, MT) Today: Isolated showers and t-storms after noon. Patchy fog before 9am otherwise, mostly sunny, high near 77. Calm wind becoming west northwest 6 to 9 mph. Chance of precipitation is 20%.</p> <p>Tonight: Partly cloudy, low around 55. North wind 6 to 10 mph.</p> <p>Wednesday: Mostly sunny, with high near 79. East wind 6 to 8 mph becoming south.</p> <p>24-hr forecast (Williston, ND) Today: Showers likely, with t-storms possible after 1pm. Mostly cloudy, high near 68. East wind around 8 mph. Chance of precipitation is 60%. New rainfall amounts between 0.1 to 0.25 inch, higher amounts possible in t-storms.</p> <p>Tonight: 20% chance of showers and t-storms before 1am. Mostly cloudy, low around 55. East wind 6 to 11 mph.</p> <p>Wednesday: 30% chance of showers. Cloudy, high near 69. North wind 8 to 17 mph, gusts as high as 24 mph.</p>	<p>24-hr forecast (Riverdale, ND) Today: Showers likely, mainly before 1pm. Cloudy, high near 66. North wind 9 to 11 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch possible.</p> <p>Tonight: 20% chance of showers. Cloudy, low around 55. North wind 7 to 11 mph.</p> <p>Wednesday: 30% chance of showers. Cloudy, high near 70. North wind 7 to 14 mph, with gusts as high as 20 mph.</p> <p>24-hr forecast (Washburn, ND) Today: Showers likely. Cloudy, high near 65. North wind 10 to 14 mph, gusts as high as 20 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible.</p> <p>Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 8 to 11 mph.</p> <p>Wednesday: 30% chance of showers. Cloudy, high near 69. North wind 8 to 17 mph, gusts as high as 24 mph.</p>	<p>24-hr forecast (Pierre, SD) Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%.</p> <p>Tonight: 30% chance of showers and t-storms, mainly before 1am. Mostly cloudy, low around 54. North northwest wind 18 to 25 mph, with gusts as high as 36 mph.</p> <p>Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph, with gusts as high as 30 mph.</p> <p>24-hr forecast (Ft. Pierre, SD) Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%.</p> <p>Tonight: 30% chance of showers and t-storms before 1am. Mostly cloudy, low around 54. North northwest wind 17 to 25 mph, with gusts as high as 36 mph.</p> <p>Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph.</p>	<p>24-hr forecast (Lower Brule, SD) Today: Showers and t-storms. High near 63. North northwest wind 24 to 28 mph, with gusts as high as 38 mph. Chance of precipitation is 100%.</p> <p>Tonight: 40% chance of showers and t-storms, mainly before 1am. Cloudy, low around 56. North northwest wind 20 to 26 mph, with gusts as high as 38 mph.</p> <p>Wednesday: Partly sunny, high near 71. North northwest wind 18 to 24 mph, with gusts as high as 33 mph.</p>	<p>24-hr forecast (Chamberlain, SD) Today: Occasional showers, t-storms possible after 10am. Some storms could produce heavy rain. High near 61. North northwest wind 21 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 100%. New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tonight: Chance of showers and t-storms, mainly before 1am. Cloudy, low around 57. North northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 40%.</p> <p>Wednesday: Slight chance of showers and t-storms before 1pm. Partly sunny, high near 70. North northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 20%.</p>	<p>24-hr forecast (Yankton, SD) Today: Showers likely, then after 10am. Some storms could produce heavy rain. High near 66. North northwest wind 10 to 13 mph increasing to 18 to 21 mph. Winds could gust as high as 30 mph. Chance of precipitation is 90%. New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tonight: Chance of showers and t-storms before and after 1am. Low around 58. Northwest wind 22 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 80%. New rainfall amounts 0.1 inch, higher amounts possible in t-storms.</p> <p>Wednesday: Chance of showers and t-storms. Cloudy, high near 67. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 50%.</p> <p>24-hr forecast (Sioux City, IA) Today: Showers likely, then after 10am. Some storms could produce heavy rain. High near 69. Southeast wind 9 to 14 mph becoming west. Chance of precipitation is 80%. New rainfall amounts 0.25 to 0.5 inch possible.</p> <p>Tonight: Showers likely and a possible t-storm. Cloudy, low around 59. West northwest wind around 17 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.</p>

Source of information: <http://www.weather.gov>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 21 Jun; 1400 CDT)

Fort Peck	Garrison	Osage	Big Bend	Fort Randall	Gavins Point
	<p>24-hr forecast (Bismarck/Mandan, ND) Today: Showers likely. Cloudy, high near 64. North wind 14 to 16 mph, with gusts as high as 23 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible.</p> <p>Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 10 to 14 mph, with gusts as high as 20 mph.</p> <p>Wednesday: 30% chance of showers. Cloudy, high near 70. Breezy, with a north wind 9 to 12 mph increasing to 17 to 20 mph. Winds could gust as high as 28 mph.</p>				<p>Wednesday: Chance of showers and t-storms. Cloudy, high near 65. Northwest wind 16 to 22 mph, with gusts as high as 30 mph. Chance of precipitation is 50%.</p> <p>24-hr forecast (Omaha, NE) Today: Chance of showers and t-storms, then showers likely and a possible t-storm after 1pm. Cloudy, high near 73. West southwest wind 10 to 18 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in thunderstorms.</p> <p>Tonight: Chance of showers, mainly before 1am. Cloudy, low around 60. West northwest wind 15 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 30%. New rainfall amounts 0.1 inch possible.</p> <p>Wednesday: 30% chance of showers, mainly before 1pm. Cloudy, high near 71. Northwest wind 15 to 21 mph, with gusts as high as 30 mph. New rainfall amounts 0.1 inch possible.</p>

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>



Missouri River Flooding (Logistics) (Updated 21 Jun; 1400 CDT)

Personnel Deployed	
7 (Glasgow, MT) 1 (Garrison, ND) 4 (Bismarck, ND) 1 (Fort Yates, ND) 6 (Williston, ND)	5 (Pierre, SD) 1 (Kansas City, MO) 3 (Sioux City, IA) 1 (S. Sioux City, NE) 1 (Onawa, IA)
	16 (Missouri River Survey – 7 teams) 1 (Lincoln, NE) 1 (Offutt, NE) 5 (Hamburg, IA)

Equipment Deployed	
HESCO (3' and 4') Issued: 74,270 LF On Hand: 30,950 LF Projected Outstanding Requirements: 35,000 LF	Slingbags On Hand: 1,225 slingbags (2K lbs each)
Sandbags Issued: 14,637,000 On Hand: 6,923,500 Projected Outstanding Requirements: 6.5 M	Heavybags On Hand: 6,420 heavybags (35x35x35 each)
Poly Rolls Issued: 2,836 rolls On Hand: 1,987 rolls Projected Outstanding Requirements: 1,500 rolls	Geotextile On Hand: 4 rolls (16' x 500')
Pumps Issued: 48 pumps On Hand: 5 pumps (4 – serviceable) Projected Outstanding Requirements: 20 pumps	Additional Supplies due in: 1 pump waiting on PTO shaft HESCO: 4,750 LF

Yesterday I received the email message from Mr Stephens. Below is a draft response to Mr Stephens email note to me. Please feel free to edit as you see fit to help craft our important response message. Do you see merit in also sending to the STL Post (I did verify it was included in the 12 June editorial section)?

Mr. Stephens,

I do appreciate you taking the time to write me a letter and for expressing your concerns regarding this historic Missouri River flood event. As you might expect, I do not agree with your assumptions and would like the opportunity to share some information (thoughts?) with you.

Background for current situation:

- First, it is important to recognize that each flood is unique. For example, the 1993 flood you referenced resulted from extensive and repeated high rainfall events on the lower plains and across Missouri. Uncontrolled flows from rivers such as the Chariton, Grand, and Platte contributed extensively to that flood event. To date the 2011 event has been the result of historic snow and rain events in the upper basin. (is all this correct?)
- 2010 was the third highest water year on record for the entire basin. As the 2010 flood subsided late in the summer, the Corps began to release high levels of water from the six mainstem reservoirs throughout the winter. The releases were slowed in January due to significant ice development and the potential for ice jam flooding. Releases were increased once that threat had passed.
- On January 28, 2011, the reservoir system had full flood capacity for this year's runoff season.
- On May 1, the Corps projected summer releases of 57,500 cfs from Gavins Point Dam; we were on schedule to evacuate the runoff from the record snowpack.
- Then came the extraordinary rainfall during May 2011 - the equivalent of 1 years rain in a two week period! The rains in Montana, the Dakotas and Wyoming resulted in 3 times the monthly average runoff (10.5 million acre-feet vs 3.3 MAF). This was the second highest single month of runoff within the basin since 1898 - the record is 13.2 MAF in April of 1952.
- The reservoir system is operating as planned and designed. In fact, imagine the scenario if the mainstem reservoirs were not in place or allowed to run uncontrolled. The balance is to evacuate water from the entire system as rapidly as possible while recognizing down river constraints.

Operation:

- Since Lewis and Clark returned from their expedition, the Army Engineers have had very close ties to the Missouri River. Over the years, the U.S. Army Corps of Engineers has been charged by Congress to remove snags, protect banks, construct navigation channels and build flood risk management structures (levees and dams) on the Missouri River to provide social and economic benefits to the nation. Some of these development activities on the Missouri River have come at the expense of the river's native fish and wildlife.
- The Corps operates the Missouri River as a system for eight Congressionally authorized purposes (alphabetically) -- fish & wildlife, flood control, hydropower, irrigation, navigation, recreation, water supply, and water quality.
- There are two large water resource projects on the Missouri River - the six mainstem dams and the Bank Stabilization and Navigation Project(BSNP).
- The US Fish and Wildlife Service gave the Corps a Biological Opinion (BO) in 2000 (amended in 2003) which stated our operations of the Missouri River jeopardized the three federally listed species - pallid sturgeon, least tern, and piping plover.
- With local, state and federal input, the Missouri River Mainstem Reservoir System's Master Water Control Manual was approved in 2004 and updated in 2006. This is what guides the

operation of the Missouri River for the eight authorized purposes and keeps the Corps in compliance with the BO.

Spring Pulse:

- In response to the needs of the native river fish on the Lower Missouri River, especially the endangered pallid sturgeon, March and May spring pulses from Gavins Point Dam are run when certain conditions exist - adequate water in the reservoirs, high flow limits would not be exceeded downriver.
- Pallid sturgeon need higher spring flows to cue spawning and to link them to other areas of the river during their life cycle. The spring pulse from Gavins Point Dam, located on the Nebraska and South Dakota border, is meant to replicate a natural seasonal rise that prompts the species to spawn.
- Pallid sturgeon are an ancient species protected by the Endangered Species Act.
- Spring pulses created spring rises on the downstream Missouri River. These pulses are designed to mimic the much larger, historic spring rises on the Missouri River, which still occur naturally as one proceeds further down the Lower Missouri River.
- The environmental benefits of the created spring rises are, therefore, to be more significant in the upper 200 miles of the Lower Missouri River from Gavins Point Dam to about Omaha, Nebraska.
- The March 2011 pulse was to be 5,000 cubic feet per second minus the James River flow near its confluence with the Missouri upstream of Sioux City, Iowa. However, the James River was nearly 25,000 cfs (plains snowpack melt) and the Missouri River was already above the downstream flow limits set to reduce or eliminate farmland flooding at Omaha, Nebraska City and Kansas City, Mo. Result was a natural spring pulse from uncontrolled tributaries and not a created pulse. Same held for the May 2011 pulse.

Finally, the Corps does take very seriously its job of operating the Missouri River system to meet the eight authorized purposes. It should be noted that the Corps projects on the Missouri River have provided benefits to the nation in categories such as hydropower, flood risk management, recreation and navigation valued at nearly \$2 billion annually; with a total annual cost to operate these projects of approximately \$120 million. The total Corps investment on the Missouri River mainstem to date has been just over \$4 billion.

Sincerely,

[REDACTED]
Senior Program Manager
Missouri River Recovery Program
US Army Corps of Engineers
O: [REDACTED] (Kansas City)
O: [REDACTED] (Omaha)
C: [REDACTED]
[REDACTED]@usace.army.mil

-----Original Message-----

From: [REDACTED] [mailto:[REDACTED]]
Sent: Monday, June 20, 2011 9:47 AM
To: Fischer, Steven A NWK
Subject: Missouri River Recovery Plan

Mr. Fischer,

Below is a letter that I sent to the St. Louis Post Dispatch, and they published on Sunday June 12, about the Corps mismanagement of the Missouri river. A would appreciate your comments on the letter. I think more and more the public is beginning to understand the abuse

of power given to the Corps by congress by causing more and larger floods than would normally occur.

Corps of Engineers wrong again

Last week the Corps of Engineers announced that over the next few weeks they will be releasing up to 150,000 CFS of water from the Gavins Point reservoir on the upper Missouri river, which will cause record flooding down stream. Their explanation for this release was due to heavy rainfall and heavy snow pack in the upper Northern area. Naturally, as always, the public listens and absorbs what the Corps puts out as gospel. However, the farmers and people who have had experience with the Corps over many years fully understand the true reasons for some but not all floods on the Mississippi and Missouri rivers.

For several years now the Corps has wanted to create flooding by rising the Missouri river level up to 3 feet above flood stage twice each spring to improve spawning of the spoonbill/paddlefish.. The crops have been unable to do this as planned every year due to insufficient water in the reservoirs on the upper Missouri river. Therefore they have been holding as much water as possible in those reservoirs saving it to be able to create the spring floods as planned. Well they got burnt again, as they did in 1973/1993. As the heavy rains came with the reservoirs already full or nearly full, they have to release massive amounts of water during what might have been a normal flood event. Most likely there would have been some flooding without the Corps expert assistance. This is but one of the many floods we can attribute to the Corps mismanagement of the rivers.

Harold L. Stephens

[REDACTED]
West Alton, Mo. 63386
[REDACTED]

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

NWO

From: Lester Cruse [Lester.Cruse@ergon.com]
Sent: Tuesday, June 21, 2011 1:48 PM
To: Bill Beacom; Bill Jackson; Carl Clark; Chad; Dave Dewey; David Smith; Doug Clark; Doug Halbert; Henleben, Ed MVS External Stakeholder; Garland; Jason Branstetter; John Drew; Katie Safley; Kevin Holcer; Kip; Larry Reddick; Cruse, Lester External Stakeholder; [REDACTED] LRP; Mike Olson; [REDACTED] MVS External Stakeholder; Pam Lawhon; Paul Dolak; Randy Asbury-CRP; Randy Canfield; Ray Bohlken; Roger Harris; Steve Engemann; Steve Engemann WK; BMCM Dean Smith; Coder, Justin S USCG; CDR Steven Teschendorf; Cpt Steve Hudson; David Martyn; LCDR Jeffrey Morgan; LCDR Scott Stoermer; Scott Adler; [REDACTED] NWD; [REDACTED] MVS; [REDACTED] NWK; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] NWK; [REDACTED] NWD02; [REDACTED] MVD; [REDACTED] NWD02; [REDACTED] HQ02; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] MVS; [REDACTED] NWD02; [REDACTED] NWO; Thomas, Kimberly S NWO; [REDACTED] NWO; [REDACTED] WO
Subject: Missouri River WAP-HW Trigger Table Updated for 06-21-2011
Attachments: MO RIV WAP HW Trigger Table June 21, 2011.xls

<<MO RIV WAP HW Trigger Table June 21, 2011.xls>>

Missouri River Conference Call at 1630 CDT June 21, 2011 to discuss any changing water and weather conditions. Call in number is 866-653-4587 <tel:866-653-4587> Pin 5309349#. Thanks Lester Cruse

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Tough times never last, but tough people do with Gods Help!

MISSOURI RIVER WAP ANNEX HIGH WATER STAGE

TRIGGER TABLE

June 21, 2011

RISING GAGE READING

Reach	Gage Location	No Action	Trigger Stage Reading (ft)*	
			Normal Operations	High Water
ST LOUIS CITY REACH	St. Joseph	< 15	15 - 17	17 - 20
RM 500 - 400	Atchison**	< 21	15 - 17	17 - 20
Alc. Bridge out at 26'	Kansas City	< 30	30 - 32	32 - 35
KANSAS CITY REACH	Kansas City	< 30	30 - 32	32 - 35
RM 400 - 300	Waverly	< 20	20 - 22	22 - 25
BRUNSWICK REACH	Waverly	< 20	20 - 22	22 - 25
RM 300 - 200	Miami	< 18	18 - 21	21 - 25
	Glasgow	< 22	22 - 25	25 - 27
	Boonville	< 20	20 - 21	21 - 25
JEFFERSON REACH	Boonville	< 20	20 - 21	21 - 25
RM 200 - 100	Jefferson City	< 22	22 - 23	23 - 26
	Hermann	< 20	20 - 21	21 - 25
HERMANN REACH	Hermann	< 20	20 - 21	21 - 25
RM 100 - 0	Washington	< 19	19 - 20	20 - 26
	St. Charles	< 22	22 - 25	25 - 27

* NOTE: For Falling Gage Readings Review the Table Columns from Right to Left

***NOTE: Bridge Tender for Union Pacific RR Bridge at Atchison, KS may close the swingspan section when Atchison river gage reaches 26 ft with a rising river predicted.

[illegible]

NWO

From: Lester Cruse [Lester.Cruse@ergon.com]
Sent: Tuesday, June 21, 2011 1:11 PM
To: Bill Beacom; Bill Jackson; Carl Clark; Chad; Dave Dewey; David Smith; Doug Clark; Doug Halbert; [REDACTED] MVS External Stakeholder; Garland; Jason Branstetter; John Drew; Katie Safley; Kevin Holcer; Kip; Larry Reddick; Cruse, Lester External Stakeholder; [REDACTED]; [REDACTED] LRP; Mike Olson; [REDACTED] MVS External Stakeholder; Pam Lawhon; Paul Dolak; Randy Asbury-CRP; Randy Canfield; Ray Bohlken; Roger Harris; Steve Engemann; Steve Engemann WK; BMCM Dean Smith; Coder, Justin S USCG; CDR Steven Teschendorf; Cpt Steve Hudson; [REDACTED]; LCDR [REDACTED]; LCDR Scott Stoermer; Scott Adler; [REDACTED] NWD; [REDACTED] MVS; [REDACTED] NWK; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] NWK; [REDACTED] NWD02; [REDACTED] MVD; [REDACTED] NWD02; [REDACTED] HQ02; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] MVS; [REDACTED] NWD02; [REDACTED] NWO; Thomas, Kimberly S NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Missouri River WAP-HW Trigger Table for 06-21-2011
Attachments: MO RIV WAP HW Trigger Table June 21, 2011.xls

The Crop of Engineers River stage data is missing but I will update and send it out as soon as I get it here at the office. Thanks Lester

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[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Tuesday, June 21, 2011 1:07 PM
To: [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED], Jody S
NWD02; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED]
NWD02; [REDACTED] NWD-OMAHA; [REDACTED] NWD02; [REDACTED]
NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02;
[REDACTED] NWD02; [REDACTED] NWD02
Cc: [REDACTED] ACE-IT; [REDACTED]; [REDACTED] NWD; [REDACTED]
NWO; [REDACTED] NWO
Subject: FW: Warehouse today (UNCLASSIFIED)
Attachments: Warehouse Dock 21 Jun.jpg; Warehouse 21 Jun.jpg

Classification: UNCLASSIFIED
Caveats: NONE

MRR project this morning. The dock area is up at least 18" from last pictures maybe two weeks ago.

[REDACTED]
-----Original Message-----

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 10:02 AM
To: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Warehouse today (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Tuesday, June 21, 2011 12:53 PM
To: [REDACTED] NWD02; [REDACTED] NWO; CENWO-EOC NWO; Williamson, Eileen L NWO; [REDACTED] MVR; Farhat, Jody S NWD02; [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] LRH; [REDACTED] LRH; [REDACTED] VM; [REDACTED] LRH
Cc: [REDACTED] NWO; [REDACTED] NWD02; Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED] NWD-OMAHA; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] RMC; [REDACTED] NWD02; [REDACTED] NWD; [REDACTED] MVD; DLL-CELRD-RBW; 'Patriciawhitt@msn.com'; [REDACTED] HQ02; [REDACTED] HQ; [REDACTED] SAW; [REDACTED] MVD; [REDACTED] LRC
Subject: RE: Missouri River Basin Water Management Division Situation Report of 6-21-11 (UNCLASSIFIED)
Attachments: Missouri River Basin Water Management Situation Report 6-21-11.docx

Classification: UNCLASSIFIED
Caveats: NONE

Any questions call me.

[REDACTED]
Northwestern Division
[REDACTED] Ofc
[REDACTED] Blkbry

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Basin Water Management Situation Report – 6-21-11

Reservoir Conditions

The upper three reservoirs of the Missouri River Mainstem Reservoir System provide the bulk of the storage of water. All three are in their exclusive flood control zones, with Fort Peck and Garrison passing their spillway crest (continuing up on raised spillway gates) and Oahe being near its spillway crest.

Table 1 summarizes the situation as of 0000 hours this morning. The relatively high inflows that have been coming into Garrison and Oahe Reservoirs will likely continue. More details on the reservoirs can be found on the daily bulletin prepared by the Missouri River Basin Water Management Division at: <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>.

Table 1. Key Reservoir Data (through 0000 hrs 6/21/11)

Reservoir	Inflow kcfs	Outflow kcfs	Top of Spillway	Current Level feet msl	24-hr Change feet
			Gates feet msl		
Fort Peck	50.0	61.8	2250	2251.9	-0.1
Garrison	188.0	150.2	1854	1854.2	0.2
Oahe	201.0	160.3	1620	1618.9	0.3
Big Bend	172.0	158.9	1423	1419.9	0.5
Fort Randall	200.0	143.5	1375	1366.3	1.2
Gavins Point	150.0	150.0	1210	1207.5	-0.1

Based on the current level data for the upper three reservoirs, the amount of remaining storage has been changing in its distribution among the upper three, larger reservoirs. Fort Peck remains in surcharge, though outflows did exceed inflows today. With the increased releases from Fort Peck and the increase in tributary inflows, Garrison Reservoir is rising and has gone into surcharge. Oahe will not be surcharged because there are no plans at this time to use its spillway, which would result in the raised gates and the potential to surcharge that reservoir. The lower three reservoirs have much less capability to store the inflows that are coming into the Missouri River Mainstem Reservoir System, with Fort Randall Reservoir having the greater amount. The stored water has entered further into the exclusive flood control zone of Fort Randall, but not of Big Bend and Gavins Point where 100 percent of their exclusive flood control storage remains available. Table 2 summarizes the storage volumes of all six System reservoirs, with the last column listing the amount of exclusive flood control storage that remains as of today. Spillways are now being used at five of the six reservoirs, with no plans to use the Oahe spillway at this time.